Armenian is an Indo-European language, but it is known for harboring many words that are not inherited from Proto-Indo-European. This PhD dissertation takes a close look at three distinct, early loanword layers in Armenian: words from Hurro-Urartian languages, from Kartvelian languages, and from at least one language that also loaned words to other Indo-European languages. By scrutinizing these three groups of loanwords, we learn more about the contact events that shaped the early history of Armenian, but also about the population movements that brought speakers of Armenian into their historical homeland in the highlands south of the Caucasus.

Leiden University 2023

prehistoric loanwords in armenian

RASMUS THORSØ

prehistoric loanwords in armenian

HURRO-URARTIAN, KARTVELIAN, AND THE UNCLASSIFIED SUBSTRATE

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Prehistoric loanwords in Armenian: Hurro-Urartian, Kartvelian, and the unclassified substrate

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Hurro-Urartian, Kartvelian, and the unclassified substrate

Rasmus Thorsø
PhD dissertation
Leiden University, The Netherlands

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Prehistoric loanwords in Armenian: Hurro-Urartian, Kartvelian, and the unclassified substrate

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Abbreviations and symbols

Languages and sources

Ab.	Abkhaz
Adg.	Adyge
Aeol.	Aeolic Greek
Akk.	Akkadian
Alb.	Albanian (G = Gheg)
Arab.	Arabic
Aram.	(Common) Aramaic
Arm.	Armenian
Ass.	Assyrian
Att.	Attic Greek
Av.	Avestan
Bal.	Balochi
Bsq.	Basque
Ch.	Chechen
Chg.	Chirag
ClArm.	Classical Armenian
Cret.	Cretan Greek
Cypr.	Cypriot Greek
Cz.	Czech
Da.	Danish
Du.	Dutch
E	English
Fal.	Faliscan
Far.	Faroese
Fi.	Finnish
Fr.	French

G	German
Gaul.	Gaulish
Ge.	Georgian
Gk.	Greek
Gmc.	Germanic
Go.	Gothic
GZ	Georgian-Zan
Hat.	Hattic
Heb.	Hebrew
Hit.	Hittite
HLuw.	Hieroglyphic Luwian
Hom.	Homeric Greek
Hsch.	Hesychius
HU	Hurro-Urartian
Hu.	Hurrian
Hung.	Hungarian
IE	Indo-European
IIr.	Indo-Iranian
Ing.	Ingush
Ion.	Ionic Greek
Ir.	Iranian
It.	Italic
Kab.	Kabardian
Khin.	Khinalug
Khot.	Khotanese
Khwar.	Khwarezmian
Lat.	Latin
Lezg.	Lezgian
Li.	Lithuanian
Ltv.	Latvian
Luw.	Luwian
Lyd.	Lydian
Mac.	(Old) Macedonian
MEA	Modern Eastern Armenian
Meg.	Megrelian
MHG	Middle High German
MidA	Middle Armenian
MIr.	Middle Irish
MLG	Middle Low German
MP	Middle Persian

Mun. Munji
MWe. Middle Welsh
Myc. Mycenaean Greek
ND Nakh-Daghestanian (East Caucasian)
NP New Persian
Nw. Norwegian
OCS Old Church Slavonic
OE Old English
OFr. Old French
OGe. Old Georgian
OHG Old High German
OIr. Old Irish
ON Old Norse
OP Old Persian
OPr. Old Prussian
ORu. Old Russian
OS Old Saxon
Oss. Ossetic (D = Digor, I = Iron)
PA Proto-Armenian
PAlb. (Pre-)Proto-Albanian
Pash. Pashto
PC Proto-Celtic
PD Proto-Daghestanian
PGm. Proto-Germanic
Phr. Phrygian
PIE Proto-Indo-European
PIIr. Proto-Indo-Iranian
PIr. Proto-Iranian
PIt. Proto-Italic
PK Proto-Kartvelian
PND Proto-Nakh-Daghestanian
Pol. Polish
PSl. Proto-Slavic
Pth. Parthian
PU Proto-Uralic
PWC Proto-West Caucasian
PZ Proto-Zan
Rom. Romanian
Ru. Russian
RuCS Russian Church Slavonic

SCr.	Serbo-Croatian
Skt.	Sanskrit
Sln.	Slovenian
Sogd.	Sogdian
Sum.	Sumerian
Sv.	Svan
Sw.	Swedish
Syr.	Classical Syriac
Tab.	Tabasaran
ToA	Tocharian A
ToB	Tocharian B
Ub.	Ubykh
Umb.	Umbrian
Ur.	Urartian
WC	West Caucasian
We.	Welsh
YAv.	Young Avestan

Grammar

ABL	ablative
ACC	accusative
ADJ	adjective
AOR	aorist
DAT	dative
DEF	definite
GEN	genitive
LOC	locative
NOM	nominative
OBL	oblique
PL	plural
PTC	participle
SG	singular
TANT	tantum (only)

Other

BCE	before common era
c.	century

CE	common era
cf.	compare
dial.	dialectal
ed(s).	editor(s)
e.g.	for example
et al.	and others
etc.	et cetera
fn.	footnote
i.a.	among others
i.e.	that is
lex.	lexicographical hapax
lit.	literal(ly)
p.c.	personal communication
PN	personal name
s.v.	under the lemma
TN	toponym
var(s).	variant(s)
vel sim.	or similar, or the like
viz.	namely
vs.	versus, against

Symbols

<	developed by sound change from
>	developed by sound change to
⇐	derived (analogically) from
⇒	derived (analogically) to
←	borrowed from
→	loaned to
***...**	reconstructed form or quasi-form
****...***	reconstructed form of attested lexeme
****...**	counterfactual form
∘	omitted part of a form
/	morphological alternation
∞	irregular alternation
√	lexical root
-	morphological boundary
#	word boundary

∅	zero
V	vowel
C	consonant
P	labial stop
T	dental stop
K	(palato)velar stop
D	voiced stop
R	resonant
N	nasal
H	laryngeal
S	alveolar sibilant/affricate
Š	palatal sibilant/affricate

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Introduction 1

The prehistory of the Armenian language is a topic with a long research history. Its modern phase began with the discovery, made by Hübschmann (1875–1877), that Armenian constitutes a separate branch of the Indo-European languages and not, as previously assumed, an Iranian language. This breakthrough led to another recognition about the Armenian language, namely that its inherited, Indo-European core had undergone dramatic changes over the course of history, in terms of both phonology, morphology, and lexicon. In this process of language change, the contact between Armenian and various neighbouring languages undeniably played an important role. With regard to lexical replacement, the introduction of Middle Iranian loanwords, during the height of Persian political and cultural influence on Armenian, is probably the most striking and well-known event. It was the main reason for erroneously grouping Armenian with the Iranian languages in the first place. After the first sound laws of Armenian had been discovered, and the inherited part of the lexicon had been identified, two fundamental tasks presented themselves. First, explaining the development of the Indo-European inherited elements and establishing the place of Armenian within the family tree. Second, categorizing and stratifying the various layers of foreign influence upon the language,

pointing to possible geographic contact zones, where Armenian would have been spoken at earlier points in time.

All in all, the Armenian preservation of inherited vocabulary, compared to most other Indo-European languages, is scarce. A considerable share of the non-inherited vocabulary is made up of loans from attested languages. The three main, identifiable sources of loanwords are considered to be the Middle Iranian languages (especially Parthian), Greek, and Syriac (Meillet 1936b: 143, Clackson 2017). Yet, more than half of the Armenian lexicon remains etymologically unexplained. Ačaŕyan's *Hayerēn armatakan baŕaran* (HAB, 1926–35), a monumental etymological dictionary, which retains much of its relevance to this day, is still the only near-complete historical treatment of the Armenian lexicon. As shown below, its 10,722 lemmata can be divided into four categories, following Solta (1990: 13), on the basis of Ačaŕyan's conclusions. Although some of these conclusions have since been revised, the picture broadly remains the same. The category "Loanwords" covers Iranian, Greek and Syriac words, but also occasionally words considered to be from Phrygian, "Caucasian" languages and unattested Mediterranean languages. The category "Other" covers what Ačaŕyan considers onomatopoeic words, as well as ghost words.

Inherited	713 (≈ 7 %)
Other	421 (≈ 4 %)
Loanwords	4016 (≈ 38 %)
Unknown	5572 (≈ 52 %)

While the field of Armenian etymology has seen substantial progress since Ačaŕyan, there has been no considerable diminishment of words with completely unknown origin. Within the Indo-European family, the amount of identified, inherited lexicon is thus comparable to that of Albanian; yet Armenian is attested from fifth century CE, a full millennium before the appearance of the first Albanian text in 1555. This naturally leads to challenges for researchers who wish to reconstruct earlier stages in the development of Armenian (conventionally termed 'Proto-Armenian'), and to reconstruct the prehistory of Armenian speakers as a whole. As emphasized by Hübschmann's pioneering work, the separation of loanwords from potentially inherited lexemes is a crucial prerequisite to this task. It is hardly a coincidence that the first

four chapters of his *Armenische Grammatik* (1897) are dedicated to loanwords from Persian, Syriac, Greek, and words of uncertain origin, before dealing with the inherited vocabulary only in the fifth and final chapter.

Since Hübschmann's time, Indo-Europeanist research on the Armenian lexicon has been preoccupied mainly with the inherited element. Important early contributions include those of Bugge (1893), Meillet (1894), and Lidén (1906). Nevertheless, several smaller, prehistoric loanword layers have also received interest. The historical location of the Armenian language, the highlands of the southern Caucasus and eastern Anatolia, invites a number of potential candidates for known languages that could have influenced it during prehistory. To the north, Armenian is bordered by the Kartvelian and Nakh-Daghestanian languages; to the south, the Semitic languages; and to the east, the Indo-European Iranian languages. Before the Phrygian and later Greek incursions into Anatolia, Armenian was bordered to the south and west mainly by Anatolian IE languages like Hittite and Luwian, by Hattic, as well as several unattested languages. After the collapse of the Hittite kingdom at the end of the second and beginning of the first millenium BCE, part of this territory became Phrygian-speaking. According to ancient Greek historians, the Phrygians are considered to have entered Anatolia from the Balkans, but this narrative cannot be confirmed by other sources (Wittke 2004).

An important event in the prehistory of Armenian is the emergence of the Urartian Kingdom, centered around Lake Van. Urartu established its power at the beginning of the first millennium BCE, roughly at the same time as Anatolia was settled by Phrygians, and lasted until the sixth century BCE. As such, Urartian is presumably the latest known non-Indo-European language spoken in the Armenian Highlands before the Armenians (or at least their exonym) enter written history. This occurs with the attestation of the exonyms *Armina-* and *Arminiya-* in the Old Persian Behistun-inscription of the late sixth century BCE (see Schmitt 2008).[1] The Armenian language itself, and the Armenian self-appellation *Hay-*,

[1] In many accounts, the Behistun-inscription is considered the earliest documentation of the Armenians as such, but it cannot be theoretically excluded that the satrapy *Armina* at this time designated an area west of Persia with a different population than historical Armenia. In any case, the inscription in itself does not tell us much, if anything, about the linguistic situation at this point in time.

would remain unwritten for another millenium (see EDA 382–5 and Petrosyan 2018 with literature for a discussion of the name *Hay*). The Urartian language, whose first inscriptions were discovered in the early nineteenth century, is still relatively poorly understood (cf. Zimansky 2011: 550–53). It is not demonstrably related to any other language, apart from Hurrian, which is documented in the Mitanni kingdom of mid-second millennium BCE, and was an important minority language in the Hittite empire. Urartian is the most poorly attested of the two languages, but more important to the study of Armenian due to its attestation in historical Armenia. Together, these two languages make up the otherwise isolated and extinct Hurro-Urartian family, which is usually conjectured to have split up only around 2000 BCE (Wilhelm 2008: 105). Attempts to connect Hurro-Urartian with other families, most prominently East Caucasian (Trombetti 1923, Diakonoff 1967, Diakonoff & Starostin 1986), have not led to widespread acceptance (see Smeets 1989). It thus remains unclear where Proto-Hurro-Urartian originates. The area can reasonably be limited to eastern Anatolia, northern Mesopotamia and the Caucasus region.

Given the vicinity of the Kartvelian languages to the north, it is perhaps surprising that loanwords from Georgian or Laz are usually considered to be relatively few. On the other hand, several scholars have noted the striking typological similarity between Armenian and Kartvelian languages, especially in terms of phonology (see especially Gippert 2005). This may indicate a language shift towards Armenian in the past. That is, a number of originally Kartvelian speakers had adopted the Armenian language, and in the process carried over traits from their own language. Deeters (1926, 1927) was among the first advocates of this theory. He drew attention to the virtually identical consonant inventories of Georgian and Armenian, the fixed accent in Armenian and especially Laz, and the Armenian simplification of the PIE diphthongs, which are absent on the phonemic level in Kartvelian. As for morphological and syntactic innovations, Deeters considered the lack of grammatical gender (also absent in Hurro-Urartian) and the emergence of constructions with past participle and a genitive subject, the *genetivus auctoris* (cf. Jensen 1959: 134–35). For each of these features it is difficult to exclude that they are not the result centuries of bilingualism, i.e. a *Sprachbund* effect, rather than the result of language shift. It may be noted, however, that a strong diffusion of phonological and

syntactic features without the transfer of many lexical items can be considered a reliable predictor of a relatively sudden language shift, without a long period of bilingualism in the two language communities (Thomason 2010: 35–39).

Finally, some researchers have been preoccupied with lexical traces of language contact between Armenian and one or more unknown languages, conventionally termed 'substrate languages', which also left traces in other Indo-European languages. An important reason for studying these loanwords is that they, by virtue of their particular geographical spread, can be assumed to have been adopted relatively soon after the dissolution of the Indo-European languages, while Proto-Armenian was still spoken in the relative vicinity of other Indo-European daughter languages. Another reason is that the line of research concerned with these unclassified contact languages is still relatively young, in particular with respect to its impact on Armenian. The study of substrate words can thus contribute not only to our knowledge about the prehistory of the Armenian language, but also to developing the methodology of identifying and analyzing substrate words.

1.1 Aim and method of this work

The present dissertation has two fundamental aims. The first aim is to critically evaluate and delimit three prehistoric layers of loanwords in Armenian: those from Hurro-Urartian, Kartvelian, and the shared substrate of Indo-European. Each of these layers represent distinct linguistic contact events in the prehistory of the language. This task is carried out by critically reviewing proposals for loanwords within these strata and adducing new material where possible. The other aim of this study is to determine to what extent these three, delimited loanword corpora can inform our knowledge about the prehistory of Armenian speaking populations, in particular their movements and the timing of those.

As mentioned above, Hurro-Urartian and Kartvelian represent two of the important contact languages that predate the Iranization of the Armenian-speaking area and could, for that reason, be termed 'prehistoric'. The second and third chapters of the dissertation proceeds to delimit the evidence for Armenian contact with these languages, and to estimate the timing and dating of

these prehistoric contact events. Followingly, the fourth and largest chapter deals with the lexical traces of language contact between Armenian and one or more unknown languages.

Other layers of loanwords remain outside the scope of this work. Loanwords from Anatolian languages are discussed in detail by Martirosyan (2017) and Simon (2013, 2021a). This work would not be able to make significant contributions to this research problem at the time being. Another complex question, likewise outside the scope of this work, concerns the potential loanwords from Semitic languages other than Syriac, including Akkadian. On this topic, see J̌ahowkyan 1982, Diakonoff 1982, and Greppin 1989 with references; note also the rather idiosyncratic monograph by Mkrtč^{c}yan (2005). Finally, the three major loanword strata – Iranian, Syriac and Greek – are of a size that calls for separate, dedicated works.[2]

The principal sources of lexical material in this work include the two-volume *Nor baṙgirk^{c} haykazean lezowi* (NBHL, 1836) and Ačaṙyan's HAB (second edition, 1971–79). Where necessary, these sources are supplemented by Greppin 1978, a philological study of bird names, and Łazaryan 1981, a dictionary of plant names. English glosses are generally taken from Petrosean 1875 or based on my own translations of the glosses in NBHL and HAB. For dialectal forms, the primary source is *Hayoc^{c} lezvi barbaṙayin baṙaran* (HLBB) as well as Ačaṙyan 1913. More recent etymological works, especially that of Martirosyan (EDA), are primary sources of existing etymolgical proposals and have also been consulted for additional information about dialectal forms and corrections of forms and meanings.

[2] The fundamental work on these strata remains, of course, Hübschmann 1897, which has still not been fully superceded in its scope (notwithstanding etymological dictionaries proper). For the discussion of Iranian loanwords, cf. Bolognesi 1960, with important additions by Schmitt 1983. On Greek loanwords, see Thumb 1900 and Kölligan 2020c. On Syriac loanwords, see Morani 2011 and Kitazumi & Rudolf 2021. Helpful overviews of all three strata, as well as many new contributions, are offered by Olsen (1999), including a section on loanwords from other languages, as well as words with no etymology.

Hurro-Urartian 2

The Hurrian language was widespread across the northern part of the Fertile Crescent for at least a millennium during the Bronze Age. Its attestation begins in the early second millennium BCE with a number of inscriptions from the royal city of Urkeš, in the Taurus foothills, where the Hurrians ruled over several city states. More evidence, especially in the form of place names, is found in Akkadian sources as early as ca. 2300 BCE. Even earlier, albeit more controversial, testimony of Hurrian presence comes from the Old Sum. *tabira*, *tibira* 'coppersmith', which was probably borrowed from Hu. *tabiri* (PTC) 'who has cast (metal)' (Wilhelm 1988: 50–2). In the mid second millennium, the Mitanni kingdom wielded power over most of the Hurrian-speaking area. The Mitanni elite were Indo-Aryan newcomers to the area, but they retained the local Hurrian language for writing. The Amarna tablets of the mid fourteenth century BCE, written correspondences between the Hurrians and the Egyptians, stands out as the most important monolingual Hurrian texts. Moreover, a large number of Hurrian texts in the Hittite libraries provide important linguistic material and testify to the widespread influence of this language. With the Bronze Age collapse around 1200 BCE, the Hittite empire dissolves, and the Assyrian empire expands into the former Mitanni territories. As a consequence of these events, Hurrian disappears in writing, and its

speakers are largely assimilated into the later state formations. Due to the wealth of multilingual texts in Hurrian, Sumerian, Akkadian, Hittite, and Ugaritic, the Hurrian grammar and lexicon is relatively well understood, but because it employs the foreign Akkadian cuneiform in most of its texts, many aspects of phonology remain uncertain (see Diakonoff 1971: 24–58, Giorgieri 2000: 180–92).

A few centuries after the decline of Hurrian, the cognate Urartian language begins to appear. The Urartian Kingdom (or Kingdom of Van) was situated in the northern highlands around Lake Van in Eastern Anatolia. Urartian inscriptions, mostly commemorating and celebrating the Urartian kings, are dated from around 820 BCE to around 700 BCE. The Urartian corpus is small compared to the Hurrian one, but the close relationship of these two languages is still evident. Urartian is not a direct descendant of Hurrian, however. In many respects, it is in fact more conservative and seems to be most closely related to the Old Hurrian dialect. This entails that it must have split from Hurrian by the end of the third millennium BCE at the latest (Wegner 2000: 29 fn. 33, Wilhelm 2008: 105). It thus seems possible to think of Urartian speakers as a last outpost of a Hurro-Urartian 'people', who managed to preserve their language after the collapse of the Mitanni state.

In terms of time and space, Urartu is the immediate ancestor of Achaemenid Armenia. In the Behistun inscription of King Darius I (522–486 BCE), Akk. *Urašṭu* translates OP *Armina*. It is thus clear why the Urartians and the Urartian language has been the subject of immense interest among scholars engaged with the prehistory of the Armenian people, ever since the first decipherment and translation of the Urartian inscriptions by Sayce (1882). The topic of Urartian–Armenian language contact is especially pertinent because there is no evidence to suggest a large population replacement following the collapse of the Urartian state. For that reason, it seems likely that Armenian speakers were to some extent already present in the Armenian Highlands during the existence of Urartu. It has been suggested that Urartian itself was merely a language of the elite (Zimansky 2001), and we may thus envision that a precursor to the Armenian language was spoken by a significant part of the population, perhaps among other languages. Studies in the archaeology (Avetisyan et al. 2019) and ancient DNA (Lazaridis et al. 2022a) of the area now corroborate the assumption that the

Urartian elite was an administrative overlay upon a multicultural and multiethnic population.

Petrosyan (2018: 95–102) takes a different position, arguing that the ruling elite spoke not Urartian, but Armenian. He supports this claim by furnishing Indo-European etymologies for Urartian regal names. Thus, for instance, Argišti is said to be from *$\sqrt{h_2erǵ}$- 'white, bright', and Šarduri is said to contain *deh_3ro- 'gift' (cf. Arm. *towr* 'gift'). In this case, the relation between the rulers and the population of Urartu would be more similar to the situation in the state of Mitanni, whose inscriptions are written in Hurrian, but whose regal names and certain technical terms are borrowed from Indo-Aryan. However, in the case of Urartu, the onomastic evidence is too weak to be conclusive.[1]

Loanwords yield the clearest evidence for contact between Armenian and the Hurro-Urartian languages. Furthermore, it broadly helps to clarify further the social position of Proto-Armenians in relation to Urartians. Possible loanwords between Armenian and Urartian have been noted by Msériantz (1904), Łapᶜancᶜyan (1940: 37–40, 1951, 1961: 104–46), Bănățeanu (1962), J̌ahowkyan (1967), and Greppin (1982, 1991). Critical summaries of the material, along with additional comparisons, are offered by Diakonoff (1985) and Simon (2023).

In some of his publications, Greppin (1990, 1996b, 2008b, 2011) works explicitly from the assumption that Hurro-Urartian is genetically related to the Nakh-Daghestanian (in particular Lezgic) languages. This hypothesis had previously been advanced by Diakonoff (1971: 157–71) and Diakonoff & Starostin (1986). According to Greppin, then, it is possible to reconstruct Urartian forms based on Nakh-Daghestanian comparisons and, in turn, postulate the borrowing of these forms into Armenian. The relationship between Hurro-Urartian and Nakh-Daghestanian is, however, widely considered to be unproven (see Smeets 1989). Nevertheless, it may be possible to uncover loanwords that entered both Armenian and one or more Nakh-Daghestanian (proto-)languages. In the same way, it may be possible to conjecture Hurro-Urartian words based on their presence in Armenian and Kartvelian. Of

[1] For example, the equation of Argišti and PIE *$\sqrt{h_2erǵ}$- is questionable because this root contains a palatovelar (cf. Arm. *arcatᶜ* 'silver'), while the Urartian name contains a plain velar.

course, only a textual attestation can decisively establish that a hypothesized loanword existed in a given donor language.

2.1 Hurro-Urartian loanwords in Armenian

In this chapter, I shall critically evaluate most proposals for Hurrian and Urartian loanwords in Armenian that are found in the previous literature. It is possible that some literature has been involuntarily overlooked, especially that which is older or difficult to obtain. Where no references are given, the comparison is, to the best of my knowledge, new. Three categories of proposals are distinguished. The first group (§ 2.1.1) contains the most compelling proposals, namely those loanwords attested in Hurrian or Urartian and whose forms and meanings match an Armenian word. The second group (§ 2.1.2) consists of proposed loanwords that are not attested in Hurrian or Urartian, but conjectured to have existed there on the basis of their morphology and attested loanwords in Akkadian, Hittite and other languages that were in contact with Hurrian or Urartian. Self-evidently, these proposals cannot be definitively confirmed, but I accept them as working hypotheses in cases where no other convincing etymology exists. The third group (§ 2.1.3) contains proposals which are to be rejected because the identity of form and meaning is insufficient, or because a conjectured Hurro-Urartian input form cannot be maintained.

The Hurrian material is primarily gathered from, or checked against, Thomas Richter's *Bibliographisches Glossar des Hurritischen* (BGH, 2012) and follows the transcription practice employed there, which may differ from the practice employed in other cited works. The Urartian material is checked against the dictionary of the *Corpus dei testi urartei* (CTU) by Mirjo Salvini (2018) and the *Electronic Corpus of Urartian Texts* (eCUT), which is based on Salvini's work and edited by Birgit Christiansen. Occassionally, N.V. Arutjunjan's *Korpus urartskix klinoobraznyx nadpisej* (2001) and I. I. Meščaninov's *Annotirovannyj slovar' urartskogo jazyka* (1978) have also been consulted, however mainly for the etymologies found therein. For convenience, Hurrian and Urartian forms are both cited in transcription, following BGH or Salvini (2018) respectively. Single hyphens thus mark morpheme boundaries, not sign boundaries.

2.1.1 Probable loanwords

II 1. **աղիւս** *aliws* (*o*) 'brick, tile' ← Hu. *alipši* 'mudbrick' (Martirosyan *apud* Yakubovich 2016b: 181, Simon 2023: 74). This Hurrian word was unknown to previous scholarship, as it is found only in a bilingual Hurrian-Hittite inscription uncovered at Ḫattuša/Boğazkale in 1983–85.[2] The borrowing must have preceded the lenition of postvocalic **-p-* > *-w-* in Armenian. Note that the Hurrian *Š*-signs, as in Assyrian Akkadian, generally represent [s] (Wegner 2000: 38). Hsch. ἄλιψ· πέτρα and λίψ· πέτρα, whatever their exact path of transmission, may ultimately be related to the Hurrian form as well, but given the divergent meaning, these forms are unlikely to be more directly connected to the Armenian word.

II 2. **դարբին** *darbin* (*a*) 'blacksmith' ← Ur. **dabrini* (Yakubovich 2009: 267–70). The Armenian word is usually taken as cognate with Lat. *faber* 'craftsman, smith' and reconstructed **dʰabʰrino/eh₂-* (IEW 233–4). This reconstruction requires the suffix to be a contamination of **-ro-* (as in Lat. *faber* < **dʰabʰ-ro-*) and **-i(H)no-* (Olsen 1999: 471). However, the formal and semantic similarity with Hu. *tabiri*, *tabirni*, *tabrenni*, *tabrinni* 'smith' cannot be ignored.

Martirosyan (EDA 236) proposes that Arm. *darbin* goes back to a PIE hysterodynamic paradigm. Accordingly, he suggests that Hu. *tabiri* is borrowed from an Proto-Armenian reflex of a PIE NOM.SG **dʰabʰ-ér*, while *darbin* continues the oblique stem **dʰabʰ-r-* through addition of the suffix **-(s)neh₂-*. This cannot be accepted since Hu. *tabiri* is a transparent derivation from the verbal root *tab/w-* 'to cast (metal)' with the agentive participle suffix *-ir-i* (Wilhelm 1988: 50–2). As such, the form *tabiri* is originally a verbal formation, while the derivation in *-r-inni* represents a common way of forming nouns for professions, cf. *urbarinni* 'butcher' (Wegner 2000: 49). Furthermore, Sum. *ta/ibira* is hard to exclude from this complex. While it can hardly be a loan from Armenian, it is readily explained as a Hurrian loanword (Wilhelm 1988: 50–2).

[2] Neu (1997: 256) proposes that the Hurrian word is borrowed from Akk. *libittu* 'brick'. The prothesis of *a-* can easily be caused by the Hurrian restriction against initial resonants, but the different ending is not simply accounted for, because the suffix *-(š)ši-* normally forms abstract nouns (Wegner 2000: 49). Assibilation **ti* > *ši*, as proposed by Fournet (2011: 52, 2013: 4, not citing Neu), is not a regular Hurrian sound law.

Since Hurrian initial stops were allophonically voiceless, the root *tab/w-* may reflect an underlying */dab-/. It is therefore possible to assume a donor form Ur. **dabrini*, matching Hu. *tabrinni*. On the other hand, the word is not attested in Urartian, so we cannot definitively confirm that the underlying root had a voiced onset (Simon 2023: 71). The suffix *-ni* is not attested in the function of forming profession nouns in Urartian. It appears, however, as a common individualizing suffix (Salvini 2018: 487), so the assumption of an Urartian donor form seems possible. It appears that the word entered Armenian early enough to take part in the regular metathesis of the cluster **br* > *rb* (cf. Viredaz 2019: 4). There is no evidence for such a metathesis in Urartian. Unfortunately, there is no other evidence for the timing of the metathesis. Arm. *sowrb* (*o*) 'pure, holy' has been argued to be a loan from an Old Iranian **subra-* (cf. Khot. *suraa-* 'pure' < **sḱubʰ-ro-*, Lubotsky 1998: 78–9, 2001a: 51). It remains possible, however, that the Armenian form directly reflects **ḱubʰ-ro-* without the *s* mobile (see EDA 589–90). Simon (2023: 71) claims that Arm. *arawr* 'plough' < **h₂erh₃tro-* means that the lenition preceded the metathesis. However, this only applies to the *tenues*, as they never take part in the metathesis, which is limited to clusters with *mediae* (*aspiratae*).

If we accept that the word was borrowed from Urartian, it does not necessarily mean that Lat. *faber* is unrelated to Arm. *darbin*, as implied by Martirosyan (EDA 236). The Latin word, reflecting PIt. **fabro-*, may represent a 'trade word' that spread to Italy via Anatolia, and ultimately from Hurrian. In the same semantic context, note Lat. *ferrum* 'iron' (quasi-IE **bʰerso-*), which probably reflects a *Wanderwort* with origins in the Near East as well, cf. Akk. *parzillu* 'iron' (← Luw. **parza-*; Valério & Yakubovich 2010), and perhaps Sv. *berež* 'iron' (Thorsø, Wigman et al. 2023: 111–2).

II 3. 𒄩𒌦𒅆𒅆 *xałoł* (*o*) 'grapes' ← Ur. *ḫaluli* 'a fruit (?)' or Hu. *ḫaluli* 'grape' (Diakonoff 1985: 600 following Mkrtčʿyan, J̌ahowkyan 1987: 426, BGH 122). The meaning of the Urartian word is not independently established (cf. Salvini 2018: 389). While Melikišvili (1971: 82) prefers 'ceremony, ritual (?)', Christiansen (eCUT) glosses it 'fruit'. Given the formal match with Hu. *ḫaluli*, which translates Hit. *muri-*, *muriḫan-* 'grape' and the Sumerogram $^{\text{GIŠ}}$GEŠTIN (BGH 122), it is likely that the Urartian word also means 'grape' or 'vine'. In the inscription CTU A 12-01, it also appears next to the aforementioned

Sumerogram. Given this context, the Hurrian and Urartian forms are almost certainly cognate. We can thus establish that the Armenian word was borrowed from either Urartian or Hurrian, but the direct source cannot be determined.

II 4. *խարխարեմ xarxarem* 'destroy' ← Ur. *ḫarḫar-* 'destroy' (Simon 2023: 72). Greppin (1982: 72, 1991: 721) and Diakonoff (1985: 600) discuss the alternative stem Ur. *ḫarḫarš-*, but the Armenian word was clearly adopted from the form without *-š-*. Otherwise, the equation is formally and semantically perfect. There exists a widespread stem variant *xarxal-* (see HAB II: 345), but the Urartian form demonstrates that this variant must be the result of secondary dissimilation.

II 5. *խնձոր xnjor (o)* 'apple' ← Hu. *ḫinzuri* 'a fruit tree' (Łapᶜancᶜyan 1951: 588, Greppin 1991: 724b). This is a formally perfect equation. Further, the Hurrian word was the source of Akk. *ḫinzūru, ḫenzūru, inzūru* 'a fruit tree' and Aram. *ḥazzūrā* 'apple'. Sum. *ḫašḫur*, Akk. *ḫašḫūru* 'apple' appear to be connected as well, but they must have been borrowed independently from a different source.

If *-uri* represents a suffix (cf. perhaps *salor*, II 18), it is likely that Hu. *ḫinz-* is borrowed from a Daghestanian language, cf. Dargwa *ʕinc*, Lak *hiwč*, Lezg. *ič* 'apple'; Ch., Ing. *ḫamc* 'medlar' < PND **hʕam(V)c* (Nichols 2003: 263). The native range of the wild apple (crab apple, *Malus sylvestris*) has its southern border along the southern coasts of the Black and Caspian seas, running north of the lakes Van and Urmia. Apples were not cultivated on a large scale before the Classical Era (Zohary, Hopf & Weiss 2012: 137). Thus, it is likely that earlier wild apples and seeds were imported into Mesopotamia from the Caucasus by Hurrian speakers, which also accounts for the spread of the word into Armenian. On linguistic grounds, however, it cannot be excluded that the immediate source of the Armenian word was an unattested Urartian form.

II 6. *պեղեմ pełem* 'to dig (out)' ← Ur. *pili* 'canal' (Łapᶜancᶜyan 1940: 39, 1961: 135–6; Bănăţeanu 1962: 264–5, Simon 2023: 68). The Urartian word is cognate with Hu. *peli*, *pala* 'canal' (BGH 292 with references).[3] The lowering of **i* > *e* in Armenian can be explained as a late

[3] Greppin (1991: 726b) adduces Avar *pula* 'pipe' and other, allegedly related Nakh-Daghestanian forms. These may perhaps be considered loans from Hurro-Urartian, but the vocalism seems to pose a problem.

change caused by the following *-ł*, cf. *aseł-n*, GEN.SG *asłan* (< **asiłan*) 'needle' (Martirosyan 2017: 296). We may thus assume that the verb Arm. *peł-em* is independently derived from an unattested **peł* < **pił* 'canal'.

II 7. **սան** *san* (*i*) 'kettle, cauldron' ← Ur. *šani* 'a container (vase, cauldron vel sim.)' (Łapᶜancᶜyan 1940: 38, 1961: 136; Bănăţeanu 1962: 274; Greppin 1991: 726b, 2008b: 80, Yakubovich 2016a: 158, Salvini 2018: 411). This equation is formally and semantically unobjectionable.

II 8. **փոխ** *pᶜox* (*o*/*i*) 'loan, exchange', *pᶜoxem* 'change, transfer' ← Ur. *puḫ-* 'change, alter', Hu. *puḫ-* 'exchange' (Łapᶜancᶜyan 1951: 39, Diakonoff 1982: 17, 1985: 599, Yakubovich 2009, 2016b: 181). The Hurro-Urartian lexeme must ultimately be borrowed from Akk. *puḫḫu*, *pūḫu* 'exchange, alter'. Yet, it remains most economical to assume that the word was borrowed through Hurrian or Urartian. This is because a phoneme /o/ does not exist in Akkadian except for very late dialects, and because there is a nearly complete lack of supporting evidence for direct Akkadian-Armenian contact (cf. Diakonoff 1982). Hurrian only attests to nominal formations of the root *puḫ-*, while in Urartian, we find a prohibitive verbal form *puḫiani* 'let him not alter'. According to Yakubovich (2016b: 181), this "tips the scale in favor of Urartian as the source of Armenian borrowing". It is not a decisive argument, however, since the formation of the denominal verb *pᶜoxem* would be a trivial process in Armenian. Thus, it cannot be theoretically excluded that Hurrian was the source.

2.1.2 Uncertain and conjectural loanwords

II 9. **աղախին** *ałaxin* (*o*, NOM.PL *-aykᶜ*, GEN-DAT-ABL.PL *-acᶜ*/*-ancᶜ* [Bible], later *a*) 'maidservant, female slave' ← Hu. **alla-ḫḫi-nni* lit. 'belonging to the lord or lady', cf. Hu. *alla* 'lord, lady', Ur. *alaue/i* 'lord' (Diakonoff 1971: 84, BGH 14, Simon 2023: 70). Diakonoff (1971: 84) also considers Akk. *allaḫinnu* to be a borrowing from this reconstructed Hurrian form. However, although the Akkadian word refers to some kind of administrative function, its precise meaning is unclear (CAD I: 296).

The Armenian word has been connected with the verb Arm. *ałam* 'to grind' < *$\sqrt{h_2elh_1}$- and *ałǰik* 'girl' (Meillet 1936a, Olsen 1999:

470). However, the word formation, especially the element *-x-*, is difficult to explain by Indo-European morphology (cf. EDA 24–5). The hypothesis of a borrowing from Hurrian is thus preferable.

Diakonoff (1971: 84, 1985: 599b) further considers Arm. *ałx* (*i*) 'ring, button, lock; baggage, goods; crowd' (especially in the sense 'household') to be a borrowing from Ur. **alāḫi/e*, which would be cognate with the hypothetical Hurrian **alla-ḫḫi-nni*. This is untenable, however, partly because of the semantic difference, and partly because the Urartian accent was most likely paroxytone (Wilhelm 2008: 109). Thus, the expected Armenian outcome would be ***ałax*. In any case, there is no explanation for the loss of the second **a*.

II 10. **ականակ** *anag* (*i/o*) 'tin'. This word is clearly connected to Akk. *an(n)akum*, Sum. *anna*, *nagga*, and Skt. *nāga* 'tin', but the exact path of transmission of these forms is unclear. Diakonoff (1985: 598–9) asserts that the final *-g* of the Armenian form can only be due to the Hurrian reflection of intervocalic *-k-*. A form **anagi* is not attested in Hurrian, but it is possible that the etymon is ultimately based on the verbal root Hu. *nakk-* 'to cast (metal)' (Salonen 1952: 6). In this case, the Akkadian, Sumerian and Sanskrit words are all ultimately from Hurrian. The direct source of the Armenian word remains uncertain, however.[4]

II 11. **անանուխ** *ananowx* (*o*) 'mint, *Mentha*'. As in the case of *anag* (II 10), we are faced with a *Wanderwort* with a nearly perfect formal match in Akk. *ananiḫu* (*nanaḫu, naniḫu*) probably 'mint'. The *-ow-* of the final syllable is also found in NP *nānūxēh* 'mint'. However, since borrowing from an Iranian language (as per Hübschmann 1897: 96–7, HAB I: 180) cannot explain the initial *a-*, a better solution may be to follow Diakonoff (1985: 599) and assume a Hurro-Urartian donor form **ananuḫḫe*, containing the adjectival suffix *-ḫḫe* (cf. Wegner 2000: 47–8). A parallel formation **ananiḫḫe* would have served as the source for the Akkadian word. Diakonoff compares the base with Hu. *an(an)e/iśḫi* 'joy, pleasurable, pleasing (thing) (?)' (BGH 28). All of this remains conjectural, however. An elaborate discussion of this *Wanderwort* is provided by Davtyan (2019).

[4] We may note another form showing Arm. *-g-* against Akk. intervocalic *-k(k)-*, viz. *owrag* (*a*) 'hatchet', if this can be compared with Akk. *urraku* 'sculptor' (HAB III: 613–4). Due to the semantic difference, this is questionable, however.

II 12. *բաբայ babay* 'hill' ← Ur. *baba** 'mountain', PL ^{KUR}*babani* 'mountainous land' (Łapᶜancᶜyan 1961: 133). This word is a lexicographical hapax in the *Baṙgirkᶜ hayocᶜ* by Eremia of Mełri, with the gloss *blowr* 'hill'. The lemma does not appear in all editions, however, so the existence of the word is doubtful (Amalyan 1975: 45). If it is genuine, Łapᶜancᶜyan's proposal of a loan from Urartian is possible. Hu. *paba-*, *pappa-* 'mountain' confirms that the Urartian word is inherited. Given the very late attestation, it is possible that the final diphthong ⟨-ay⟩ is a hypercorrect spelling for /-a/ (see the discussion of *caṙay*, II 37). However, the etymology is uncertain due to the lack of a reliable attestation of the Armenian word.

II 13. *դոն don* (*i*) 'a kind of bread, mostly long and thin' ← Ur. **doni*, cf. Hu. $^{(NINDA)}$*tuni* 'a bread (?); footstool'. This word is attested in the 13th c. Synaxarion (*Yaysmawowrkᶜ*), but may appear already in the *Knikᶜ hawatoy* (7th c.) in the context *doniw hacᶜiwkᶜ* 'with *don*-breads (?)' (see EDA 241). In Eremia's dictionary (Amalyan 1975: 273), it appears as a gloss of *pakᶜsimat*, a type of twice-baked bread.

Traditionally, it is considered a reflex of PIE *d^hoHneh_2- 'grain, bread' (cf. Skt. *dhānā́-*, Li. *dúona* 'bread'; HAB I: 679). The absence of the raising *oN* > *uN* is unexpected, however. Martirosyan (EDA 225, 242) suggests that *u* was lowered to *o* under the influence of a following *a* and thus assumes an *a*-stem **duna- > *dona-*. However, the only other potential example for this change is *gom* 'fold for sheep/cattle', which replaces expected **gowm* if compared to ON *gammi* 'earthen hut' < *$g^hom(m)$-. However, this word rather reflects PIE *$h_2\mu os$-mo-* 'staying place' (see IV 25). Given that the sequence *-on* points to a loanword, we may consider whether the source was an Urartian word corresponding to Hu. $^{(NINDA)}$*tuni-*, a cultic term for a pastry or bread in the shape of furniture, mostly a 'footstool' (cf. BGH 470 with references). The word also appears in Hittite contexts, as ^{NINDA}*duni-* (as well as *tunik-*, *tunink-*) 'a cultic bread, soup, or mash' (see HEG III(10): 437–8). If this word is of Hurrian origin, and originally designated a kind of bread (rather than a kind of furniture), we may be able to reconstruct an Ur. **doni* 'bread', with voiced onset, which served as the immediate donor of the Armenian form. Due to the somewhat poor attestation of the Armenian word, as well as the uncertainties regarding the original meaning of the Hurrian/Hittite cult term, the etymology remains uncertain. See also the elaborate discussion by Martirosyan (EDA 241–3).

II 14. ***ծիծ*** *cic* 'breast' ← Hu. *zizzi* 'female breast' (Fournet 2013: 10–1). The comparison is possible, but the iconic character of these words makes it impossible to exclude that they are independent creations, cf. G *Zitze* 'teat'.

II 15. ***մախր*** *maxr*, dial. *marx* 'pine' ← Hu. *maḫri* 'pine (?)' (Greppin 1991: 725, Simon 2023: 74). The Hurrian word is clearly connected to Akk. *meḫri* 'fir', the Ugaritic TN *mḫr* (BGH 238), perhaps the Nakh-Daghestanian forms Ch. *max* 'aspen', Avar *max:* 'birch' and finally NP *marx* 'resinous wood'. The Armenian word is not attested before the 13th century *Geoponica*, however. Therefore, it may also be explained as a loan from Persian (cf. Diakonoff 1985: 599 fn. 16). In this case, the metathesis seen in the literary Armenian form would be paralleled in *čᶜaxr* 'wheel' ← NP *čarx* 'id.' Strictly speaking, it is thus impossible to decide between Persian and Hurro-Urartian origin for the literary form, while dial. *marx* is clearly borrowed from, or influenced by, the Persian form.

II 16. ***նուռն*** *nowṙn* (GEN.SG *nṙan*, NOM.PL *nṙownkᶜ*) 'pomegranate' (Diakonoff 1985: 599). This is an old *Wanderwort* connected with Sum. *nurma*; Akk. *nurmû*, *nurimdu*, (Nuzi) *lurmû*, *lurīnu*. In Hurro-Urartian, the only attestation is Hu. *nurandi* 'pomegranate'. The variation found within Akkadian suggests a foreign provenance. This may be conferred with the fact that pomegranates are native to the highlands of Iran and not to Mesopotamia. The shape of the Armenian word, with two identical nasals, best matches Hu. *nuran-*, assuming that *-di* represents a suffix, which is uncertain. Assuming that the input form was Hu. or Ur. **nuran-*, we would expect Arm. *nṙ/ran* after the loss of unstressed high vowels. This form would then have been analyzed as a GEN-DAT.SG on the pattern of *dowṙn*, *dṙan*, *dṙownkᶜ* 'door'.

II 17. ***ուղտ*** *owłt* (*u*) 'camel' ← Ur. **ulṭu* (?) 'an animal' (Bănățeanu 1962: 270, Diakonoff 1985). This is certainly a *Wanderwort* connected with Akk. *udru* and Av. *uštra-* 'camel'. However, the Urartian word is only attested in the fragmentary form $^{GU_4}X\text{-}{}^{r}ṭu^{1}\text{-}ni^{MEŠ}$ (CTU A 8–3 iv 6). Given the incompatibility of other known forms, Urartian does remain the most likely donor of the Armenian word, but this cannot be confirmed. The etymology is further complicated by the Urartian use of the determiner GU_4, which seems to suggest that the word designates a type of cattle (Simon 2023: 69).

II 18. **ա ա լ ո ր** *salor* (*i/o*), dial. *šlor* 'plum'. Most likely related to Akk. *šallūru*, *šennuru* (Nuzi) 'a fruit tree', Sum. *šennur* 'plum'. This word is not directly attested in Hurro-Urartian, unless it underlies the TN *Šallurašwa* (BGH 347). Nonetheless, the Armenian word cannot be a loan from Akkadian, nor via Hurrian or Urartian, as *o* for *ū* would be unexpected (cf. Simon 2023: 78). It is possible, however, that the etymon is originally Hurrian due to the observed variation of *l* and *n* in the Akkadian/Nuzi and Sumerian forms, which would represent loanwords from different Hurrian dialects (cf. Diakonoff 1971: 55, 1985: 599b). Moreover, we can conjecture a suffix **-uri*, which recalls Hu. *ḫinzuri*, Arm. *xnjor* (II 5) 'apple' (cf. Greppin 1991: 725b).[5] In conclusion, it is possible that the direct source of the Armenian word is Urartian or Hurrian, but the etymology remains conjectural.

II 19. **տ ո ւ փ** *towpᶜ* (*o*) 'box, case' ← Hu./Ur. **tup(p)-*. Based on Hit. *tuppa-* 'chest, basket', which may be a loan from an identical Hurrian form, Simon (2023: 72) cautiously assumes an Urartian input form **dupa-*, which underwent the Armenian sound shift. Since I do not accept the premise that Hurro-Urartian loans generally preceded the sound shift (see § 2.4), I rather assume that the input form had intial **t-*, a possibility admitted by Simon, and that the final stop was aspirated as in Ur. *puḫ-* 'change' (II 8). In this case, the loan hypothesis is possible, but remains conjectural due to the lack of Hurro-Urartian attestations.

2.1.2.1 Possible Hurro-Urartian suffixes

In a small group of words, Hurro-Urartian origin can be suspected on the basis of particular suffixes alone. By their nature, all of these etymologies are uncertain.

Arm. *-ard* Łapᶜancᶜyan (1951: 595) connects *sałard* (more often spelled *sałartᶜ*) 'leaf, leafy branch' and Hu. *šalardi*, a word of unknown meaning. Two other words of obscure origin may also contain a suffix *-ard*, viz. *makard* 'rennet' and *tᶜakard* 'trap'. The

[5] The claim that the *l* tenuis of the Armenian word requires the input of a geminate (Fournet 2013: 7, 11) is baseless. If there is any difference in the treatment of geminates and singletons, rather the opposite would be the case, since in inherited words, the Armenian velarized *ł* only develops before other consonants whence it may spread analogically (Meillet 1936b: 46–7).

function of Hu. *-ardi* seems to be the formation of abstract nouns (Diakonoff 1971: 70, 73), which does not harmonize well with the meaning of the Armenian words, however. The suffix is unattested in Urartian.

Arm. *-sx* The following three words in Armenian appear to contain an element *-sx*. Already Bugge (1893: 10) identifies this as a suffix, suggesting that it reflects PIE **-isk^{h}o-*, cf. Gk. -ιχο- next to -ισκο- (= Arm. *-ic^{c}*). This is unlikely, however. Based on the meaning of these few words, I would rather suggest to tentatively compare *-(i)sx-* with Hu. *-Vsḫi*, Ur. *-sḫi* which forms *nomina loci* and *nomina instrumenti* (Wegner 2000: 50), functions which potentially fit all three examples. For none of them, however, is a comparison with any Hurrian or Urartian root possible. It cannot be determined whether the suffix *-sx* was at some point productive within Armenian. The scarcity of examples would suggest this not to be the case, but it is possible that its productivity was later eclipsed by the Iranian loan suffix *-an* (Olsen 1999: 289) and the etymologically obscure *-oc^{c}* for the specialized purpose of forming *nomina loci*.

II 20. *խաւրխսխ* *xarisx* (*a*) 'foundation'. Ge. *xarisx-* 'staircase' is borrowed from Armenian. The by-form *sarisx* is probably secondary (HAB II: 345). On phonological grounds alone, a hypothetical link with Hu. *ḫari*, Ur. *ḫari* 'road' would be possible, but the semantic development is difficult to understand, unless an additional meaning 'ground, base' is assumed. Hu. *ḫaresḫi* is found in a Hittite religious text, but its meaning is unknown (BGH 133).

II 21. *խորխսխ* *xorisx* (*o*) 'honeycomb'. Dialectally, this word often refers to the 'soft center' of cakes and fruits, and in Trebizond 'egg yolk' (cf. HAB II: 408). It has been compared to Li. *korýs* 'honey', Gk. κηρός 'wax' (Bugge 1893: 10). This requires that the suffix *-sx* was added to an inherited (perhaps originally European substrate) form **k^{h}ori-*. Bugge starts from **kori-* with subsequent (post-sound shift) assimilation **k^{c}orisx* > *xorisx*. No parallels for this phonological development exist, however.[6] No word with the meaning 'honey' or similar is attested in Hurrian or Urartian, which leaves the possibility open that *xorisx* is a wholesale borrowing from these languages.

[6] Bugge's equation of Arm. *xaxank^{c}* 'laughter' with Gk. καχάζω 'laugh aloud' is a poor parallel due to its obvious iconic character.

II 22. *շարասխ šarasx* 'a plant that deters or kills insects', attested only in a medical text. Ališan (1895: 483) cites it with a question mark, but suggests it may be identical with *šardak*, *šardowk*, similarily of unclear meaning. Ačaṙyan (HAB III: 502–3) records no etymologies for these words. It seems possible to think of *šarasx* as a derivation of *šar* 'swarm', also 'row, rank, chain' etc., but its unclear meaning makes any etymology uncertain.

Suffix *-or* The element *-or*, found in *xnjor* 'apple' (II 5) and perhaps *salor* 'plum' (II 18) is potentially a tree name suffix. This makes it relevant to note other tree names with this suffix in Armenian, even though they find no comparanda in Hurrian or Urartian: Arm. *gxtᶜor* (*głtᶜor*, *gxtor*) 'gall (nut)' and the synonymous *šklor* (Ališan 1895: 486–7).

Finally, we may note *ałtor* (var. *axtor, ałtowr*) 'sumac (tree), *Rhus coriaria*' (HAB I: 136, J̌ahowkyan 2010: 40). For this word, we may perhaps adduce Hit. $^{\text{NINDA}}$(*a*)*lattari-* 'a kind of bread', which is considered a Hurrian loanword (HED I: 32), and might thus mean 'bread sprinkled with sumac'. Ge. *alaṭro* 'sumac' seems to represent a borrowing from a related source. However, for want of any relevant Hurro-Urartian attestations, this etymology remains speculative.

2.1.3 Rejected proposals

II 23. *ագարակ agarak* (*a*) 'farm, field' ← Hu. *awari* 'field, steppe' (Greppin 1991: 724, Fournet 2013: 3). The Armenian word is an *a*-stem and contains the suffix *-ak*, which suggests it was borrowed from an Iranian form with the suffix **-aka-* (EDA 5). However, there are no Iranian comparanda, and it cannot be excluded that the suffix was added independently within Armenian (cf. Olsen 1999: 240–1). It is also difficult to exclude borrowing from a different source, e.g. Sum. *agar* 'meadow', in which case the word would have passed through an unknown language, cf. Bănăṭeanu (1962: 266), who proposes a borrowing from Sumerian through Urartian. The assumption that **-u̯-* ← HU *-w-* is reflected as Arm. *-g-* remains uncontradicted and is thus not problematic in itself, but requires confirmation by a more certain loanword, which does not exist.

II 24. *ագուռ agowṙ* (*o*) 'burned brick'. In the older literature, this word is attested only once (*Paterica*). It is clearly connected to Akk.

agurru, Aram. *agōrā* 'brick'. Diakonoff (1985: 598) assumes that the word was borrowed through Hurrian because a loan from Syriac would yield ***aguray*. The word is not attested in Hurrian, however, and because it appears late in the Armenian literature, the immediate donor may easily have been NP *āgūr* 'brick' (HAB I: 78–9).

II 25. ***այտ*** *ayt* (*i*, mostly PL *aytkʿ*) 'cheek' ← Hu. *ab/wi* (spelled *ai*(*e*)*, aj*(*e*) in Mitanni texts) 'front; in front of' (Fournet 2013: 5). The semantic match is poor, and the gloss 'face', provided by Fournet, appears to be unsupported (see BGH 36). The final *-t* is not clearly explained. If from a suffix **-di*, we would have to assume that the borrowing happened before the Armenian consonant shift, for which there are no other clear examples (see § 2.4 for a discussion). Most crucially, the Armenian word should not be separated from its derivatives *aytnowm* (AOR *ayteay*) 'to swell', *aytowmn* and *aytoycʿ* 'swelling'. All reflect PIE **√h₂eid-* 'swell', cf. Gk. οἶδος 'swelling, tumor', οἰδέω 'to swell' and OHG *eiz* 'abcess' (HAB I: 172, EDA 61).

II 26. ***այր*** *ayr* (*i*) 'cave, den' ← Hu. **abiri* derived from *abi* 'pit, hole' (Fournet 2013: 5). The suffix *-iri* is a participal suffix (Giorgieri 2000: 243) and would be unexpected in a word of this meaning. Fournet envisions a lenition of the intervocalic *b/w* similar to *ayt* (II 25), but such a lenition would be irregular. With these obstructions in mind, the traditional Indo-European etymology is preferable.

Arm. *ayr* is compared with Gk. ἄντρον 'cave' since Pisani (1944: 161–2). A comparison with Lat. *antrum* 'cave', most likely a loan from Greek, is suggested already by Petermann (1837: 146). The Greek form can be assumed to have originated as the singulative of a collective *ἄντρα, which allows for the postulation of a hysterodynamic **h₂ntḗr*, **h₂ntr-*, compare Gk. ἀστήρ and ἄστρον (Lamberterie 1978: 243–5). In Armenian, the NOM.SG **h₂ntḗr* would develop along the lines of **ántēr* > **anēr* > **anir* > *ayr*. The transfer to the *i*-stem declension probably results from a wish to eliminate an irregular *r*-stem paradigm *ayr*, **aner* (compare *oskr*, *osker* 'bone') that would have emerged after the lenition of **n* before **i* (Olsen 1999: 92).[7]

[7]The difficulty posed by Lamberterie's (1978: 243–5) proposed development via "**andhir* > **ayndhir*" through *i*-epenthesis is criticized by Clackson (1994: 98), who points out that this epenthesis otherwise never operates across consonant clusters. This does not warrant the labelling of the Greek-Armenian etymology as "impossible"

II 27. 𒀸𒅆𒇻𒁕 *aṙiwc*, *aṙewc* (*u*, later *o*; nom.pl. *aṙiwckᶜ* and *aṙiwcownkᶜ*) 'lion'. According to Blažek (2005: 14–5), this is a borrowing of Ur. **arenzu-*, an unattested cognate of the Hurrian river-name *Aranzu* (cf. also PN *Aranzaḫ* and other variants), referring to the river Tigris. Blažek ascribes the loss of *n* and the diphthong *iw* (< **ew*) to *u*-epenthesis, but it is unlikely that this rule operated at such a late point in time. The *u*-epenthesis (*strictu sensu*) as in *giwt* 'discovery' < **u̯id-*(*t*)*u-* is only observed in cases where a *u* in the final syllable has been lost. This rule is not identical with the so-called *awcanem*-rule, which is responsible for the loss of *n*, i.e. **-VnKʷ-* > Arm. *-VwḰ-* (see Kümmel 2007: 319–27). The latter must be a very early change since it only applies to sequences with old labiovelars. Therefore, it is impossible that it could also be responsible for a late change of **-enz-* > **-ewc-*.

The word has traditionally been derived from a poorly attested root **√reug-* 'roar' (HAB I: 259–60). Kölligan (2020b: 78–85) more convincingly derives it from PIE **h₃rḗǵ-ō*(*n*), GEN.SG **h₃rǵ-n-és* 'king' (cf. Skt. *rā́jā*, *rajñáḥ*, Brythonic *ricon*), an etymology first proposed by Łapᶜancᶜyan (1927: 105–7). Starting from an old *n*-stem better explains the vaccilation between *u*- and *n*-stems in the Classical Armenian paradigm (NOM.PL *-ownkᶜ* < **-ones*). The trilled *ṙ*, which is traditionally explained by sound symbolism (cf. Olsen 2020: 120), may instead represent a generalization from the archaic oblique stem **aṙn°* < **h₃rǵn-*.

II 28. 𒀸𒅔𒌅 *art* (*o*) 'tilled field' ← Hu. *arde* 'town' (Greppin 1991: 724b). The equation is unlikely for semantic reasons. Greppin adduces the parallel of Slavic **gordъ* 'town' and ON *garðr* 'yard, farm', but the Old Norse form does not betray the same semantic shift, because all these words reflect an older meaning 'fence, enclosure' (Li. *gařdas*) or 'house' (Go. *gards*).

Arm. *art* is usually considered to reflect PIE **h₂*(*e*)*ǵro-* (HAB I: 337, EDA 146–7), cf. Gk. ἀγρός, Lat. *ager*. The problem of the development **-ǵr-* > *-rt-* should not be exaggerated. This most likely reflects the loss of affrication before *r* at some point before the metathesis,

as per Beekes (2010: 110), however. If we accept the proposal of Olsen (1989; cf. Kümmel 2017) that the outcome of originally pretonic **-nt-* is *-n-*, and assume that this change was relatively early, the development of **antēr* > **anēr* would have proceeded identically with that of *ayr* 'man' from **h₂nḗr*, whether as a result of intermediate *i*-epenthesis or not.

thus *-*ǵr*- > *-*tˢr*- > *-*tr*- > -*rt*- (Pedersen 1906a: 352, but see Kölligan 2020a for an alternative view). Another example is *barti* 'poplar' < PIE *$b^h(e)rHǵ$- (EDA 146, 172–4). Arm. *merj* 'near' < *$meǵ^hsri$ (Gk. μέχρι 'as far as') is not a counterexample since the cluster was voiced and may have been more resistant to deaffrication (Pedersen 1906a: 352 assumes an intermediate stage **merz*, which is less economical).

II 29. **աստեմ** *astem* 'to ask in marriage, to marry (?)', a word of poor attestation without a fully certain meaning, has been seen as a loan from Hu. *ašte* 'woman' (Łapᶜancᶜyan 1951: 31, Greppin 1990–1991). This implies that the Hurrian word was reflected as an unattested Arm. **ast* 'woman, wife', from which the verb *astem* was internally derived. However, the meaning of the Hurrian word is also contested (BGH 59–60 with references). Alternatively, a connection between Arm. *astem* and *hastem* 'to affirm' has been proposed – see Lamberterie (1992), who notes a parallel development in MHG *vesten*, MEng. *fast* 'to become engaged'. This proposal is equally plausible. For further discussion, see EDA 119–20.

II 30. **աւան** *awan* (*a*) 'small town, village' ← Ur. *ebani* 'land, region' (Łapᶜancᶜyan 1940: 38, 1961: 133–4). According to Łapᶜancᶜyan, Meg. *abani* 'place' and Ge. *ubani* 'district' are independent loans from Urartian. However, the substitution *e* → *a* (and Georgian *u*) is unexplained. Arm. *awan* is doubtlessly an Iranian loan, cf. OP *āvahana-* 'village' (HAB I: 353). The loss of *h* between homorganic vowels, i.e. *-aha-* > *-a-*, is regular, cf. Arm. *akanǰat* 'whose ears are cut' < **akanǰahat* (HAB I: 353), Arm. *van* 'dwelling' ← Ir. **vāhana-*. The scepticism of Hübschmann (1897: 112), followed by Bănăţeanu (1962: 260), is thus unwarranted.

II 31. **աւրիորդ** *awriord* (*a*) 'young woman, maiden'. Łapᶜancᶜyan (1961: 134) considers the first element **awri*° to be borrowed from Ur. *euri* 'lord' (cf. Hu. *ewri*). Because of the vocalism (*awri-* for ***ewri-* or ***iwri-*), this equation is not compelling. A slew of alternative etymologies are at hand. Olsen (1999: 531) suggests we are dealing with an agent noun in *-ord* (< *-*$k^wr̥t$ (?), cf. *ors-ord* 'hunter') built to a stem **ātriio-* 'fire' (< PIE *h_1eh_2-*tr*-), with a semantic parallel in Lat. *ātriensis* 'house servant' and a potential cognate in Av. *ātrə-kərət-* 'who has to do with the fire'. It remains most attractive, however, to assume that the transparent analysis as a nominal compound **awri* + *ord** 'offspring' (< **porti-*, cf. Gk. πόρτις 'calf', Arm. *ord-i* 'son', and

perhaps *ort^{c}* (*ow*) 'calf') is fundamentally correct. Martirosyan (EDA 157) suggests that **awri* can reflect an Iranian **ahuri-* 'lordly', derived from **ahura-* 'god, lord', but offers an alternative comparison with Mac. ἀχρεία, Phr. (Hsch.) ἄχρι-στις 'young girl', if from **h$_2$ekr(e)i-*. Finally, an enticing suggestion is offered by Kölligan (2019: 100–4), who compares Lat. *aper* 'wild boar; a kind of fish' with the assumption of a semantic shift 'boar' > 'lord, ruler' as paralleled by the cognate ON *jǫfurr* 'king' (cf. OE *eofor* 'boar'); or, alternatively, a direct metaphorical transfer of 'young boar' to 'young woman', with several parallels in Greek literature.

II 32. **գինդ** *gind* (*a*) 'earring' ← Hu. *ḫi(n)dduḫḫu* 'an object made of metal' (Łap^{c}anc^{c}yan 1951: 583–4). The equation is phonologically impossible, because the established sound substitution of Hu. *ḫ-* is Arm. *x-* (cf. *xnjor*, II 5). The Armenian form can readily be explained from PIE **u̯end^{h}-eh$_2$-*, cf. OE *windan* 'to wind, twist' (EDA 213–4).

II 33. **երկիր** *erkir* (*i/a*) 'earth, land, world' ← Ur. *qi(u)ra* 'earth, ground, soil' (Łap^{c}anc^{c}yan 1961: 134–5). While it is probably true that Ur. *qira* would be reflected as Arm. ***kir*, we would have to assume an analogical addition of *er°* under the influence of *erkin-k^{c}* 'sky, heaven'. This scenario is not very plausible. For a comprehensive discussion of the famous word pair *erkink^{c}*/*erkir*, see Knobloch (1961), Rasmussen (1999: 623–6), and especially Kölligan (2019: 104–49), who argues that *erkir* reflects an originally epithetic **dṷēh$_2$reh$_2$* 'width'.

II 34. **ես** *es* 'I' (pers.pron. 1.sg.nom) ← Ur. *ieše* 'I' (erg) (Łap^{c}anc^{c}yan 1961: 324). From the Urartian form, we would expect Arm. ***yes* > ***[hɛs] (cf. Simon 2023: 66). The Armenian personal pronouns generally reflect the PIE paradigm, although analogy is extensive (Schmitt 2007: 115–7). The unexpected auslaut *-s* in the nom.sg of the first person is usually explained by a generalized sandhi variant, arising in positions before other affricates. Most scholars assume that the regular Armenian form was ***ec* (< **h$_1$eǵ-oH*, cf. Gk. ἐγώ), which underwent deaffrication (Meillet 1892: 164, Schmitt 2007: 116), but it is also possible to start from ***ez* (< **h$_1$eǵ^{h}-*, cf. Skt. *ahám*) with devoicing. However, especially given the acc.sg *is* < **im-s*, the influence of the deictic particle *-s-* (< **-ḱo-*, cf. *ay-s* 'this (near me)') must be taken into account as well; similarly, the deictic particle *-d-* (*ay-d*

'that (near you)') may have influenced the second person pronoun *dow*, which appears for expected **$t^{c}ow$ < *PIE *tuH* (Godel 1975: 110, EDA 257, Kölligan 2019: 122–3 fn. 372).

II 35. ⰒⰐⰻ *$t^{c}iw$* (*o*) 'number' ← Hu. *tiwe* 'word, deed', cf. Ur. *tini* 'name' (Łap^{c}anc^{c}yan 1951: 597–8, Diakonoff 1985: 599) The equation is semantically problematic. Although the derivation from PIE *√*teuH-* 'swell, become strong' (cf. Olsen 1999: 23) is not completely convincing either, it is difficult to reject.

II 36. Ⱄⰰⰸ *caṙ* (*o*, once INST.PL *caṙawk^{c}*, Song of Songs 4.14) 'tree' ← Ur. *zari*/*ṣari* 'garden, orchard', cf. Hu. *sar-me* 'wood' (Bănăţeanu 1962: 271–2, Diakonoff 1985: 600, Greppin 1991: 726, Fournet 2013: 7). Based on the Hurrian form (attested only via Akkadian; BGH 337) one may expect an additional meaning 'wood' for the Urartian word as well, but this cannot be independently established. Therefore, the semantic difference remains a problem. It is safer to follow the traditional etymology (HAB II: 446, IEW 372), taking the Armenian word from PIE **ǵrsó-*, **ǵrséh$_2$-* (cf. Gk. γέρρον 'wattle-fence', ON *kjarr* 'brushwood'. The original meaning of **ǵrsó-* may have been 'twig, branch' (cf. Hsch. γάρρα· ῥάβδος) from which a semantic shift to 'trunk; tree' is conceivable.[8]

II 37. Ⱄⰰⰸⰰⰽ *caṙay* (*i*) '(male) servant, slave' ← Ur. **ṣarrā-* 'captive' (Łap^{c}anc^{c}yan 1951: 584–5, Diakonoff 1985: 598, cf. Diakonoff *apud* Greppin 1991: 727, note F). Diakonoff compares this reconstruction to Hu. *šarri* 'live booty, spoils' and *zarri* in the Mitanni Letter (cf. BGH 357). Usually, the final segment *-ay* reflects *-ā* in Syriac loanwords, which postdate the Urartian loans (e.g. *šowkay* 'market' ← Syr. *šūqā*, *k^{e}ahanay* 'priest' ← Syr. *kāhnā*; Kitazumi & Rudolf 2021). The spelling ⟨ay⟩ appears to be a learned attempt at reflecting a foreign long /a:/ which does not exist in Armenian. This is similar to the reflection of Greek ⟨ω⟩ /o:/ as Arm. ⟨ov⟩ (Morani 2011: 152–5). It is hard to imagine that a similar principle could have applied to the much earlier Urartian loanwords. The remaining solution is that the ending of *caṙay* was affected by semantically somewhat similar terms like *tłay* 'boy' and *erexay* 'child' (cf. Pedersen 1906a:

[8] Martirosyan (forthcoming) adduces a rare word *caṙan* 'penis', found in a scholion to Philo (cited by NBHL 1: 1012), as well as in the dictionary of Norayr (922). It is possible that this word, probably limited to some dialects, represents a secondary derivation of *caṙ* '*twig' with the instrument suffix *-an*.

398). It would remain puzzling, however, why the final syllable did not undergo apocope to ***caṙ*. The assumption of an Urartian trisyllabic form ***ṣarraV* (Diakonoff 1985: 598) appears baseless. Finally, the reconstruction of initial Ur. *ṣ-* is based on the assumption that the actual Hurrian form was *sarri*, attested only once in an Akkadian word list (Diakonoff 1985: 598). Based on the more well-attested form *šarri* (BGH 357), we would expect Ur. **šarrV* → Arm. ***saṙ*. In conclusion, if the Hurrian and Armenian words are even related, the word most likely passed through another (Semitic?) language.

II 38. ***ծարաւ*** *caraw* (*o*) 'thirst, drought' ← Ur. *ṣirabae* 'unwatered, deserted' (Petrosyan 2007: 16–7). Although the Urartian word appears only once (CTU A 08-15), its meaning is clear, as it refers to a land which was *ṣirabae* before King Argišti had ordered the construction of canal there. Nevertheless, the sound substitution *i* → *a* cannot be explained, so a direct loan from Urartian is impossible.

II 39. ***ծով*** *cov* (*u*) 'sea' ← Ur. *ṣue* '(artificial) lake, reservoir' (Mséri-antz 1904, Diakonoff 1985: 600, Greppin 1991: 726). The etymology of the Armenian word is an old crux. Given the imperfect semantic agreement with the Urartian word, which mostly designates an artificial lake (cf. Salvini 2018: 411), I prefer the assumption of a loanword from Kartvelian (see III 21). For a critique of alternative hypotheses, see Kölligan (2019: 152–63), who suggests that the word represents a transferred epithet, PIE **di̯eu̯-o-bʰh₂-u-* 'sky-coloured, sky-like'. If this etymology is correct, Ur. *ṣue* cannot be a loan from Armenian, because the change of intervocalic **b* (< PIE **bʰ*) > *w* postdated the contact with Urartian, as demonstrated by the TN *Zabaḫae* → Arm. *J̌awax-kᶜ* (cf. Diakonoff 1985: 601). In other words, we would expect Ur. ***ṣub-*. If the Kartvelian etymology is correct, a loan from Armenian is possible, but requires the assumption of a semantic change 'sea' → '(artificial) lake', which seems even less likely than the opposite change.

II 40. ***կացին*** *kacᶜin* (*o*) 'axe, hatchet'. This word may be connected to Akk. *ḫaṣṣinu* 'axe', but there is no indication that Hurrian or Urartian was the immediate source for Armenian, as per Diakonoff (1982: 16; cf. Simon 2023: 77).

II 41. ***կորդ*** *kord* (*a*) 'fallow, unploughed land' ← Ur. *quldini* 'desert, barren (?)' (J̌ahowkyan 1987: 432) The Armenian word lacks a better

etymology and the semantic match with the Urartian form would be acceptable. Still, there is no explanation of the substitution *l* → *r*. According to J̌ahowkyan (1987: 432), this may reflect Urartian dialectal features, but there is no evidence for this claim. For want of parallels to this sound substitution, the comparison cannot be accepted.

II 42. *կուտ kowt* (*o*) 'grain, seed' ← Hu. *kade* 'barley' (Greppin 1982: 144–5, 1991: 725). There is no way to explain the substitution *a* → *u*. Moreover, since single consonants were realized as voiced intervocalically in Hurrian, we would expect Arm. ***kad*.

II 43. *կնիք knikᶜ* (*o*) 'seal' must be related to Akk. *kanīku* 'sealed document'. According to Diakonoff (1985: 599), the difference between initial *k*- and final *-kᶜ* points to an intermediary Hu. **kanikki*. It is not clear how this solves the problem, since there is no evidence for a particular treatment of geminates in Hurro-Urartian borrowings. More importantly, to explain the syncope of the first vowel, Armenian requires an input form **kinik*$^{(h)}$*V*- or **kunik*$^{(h)}$*V*-, with a different vowel in the first syllable, which cannot be accounted for by Hurrian intermediation.

II 44. *հուղկահար(ու) howłkahar*(*ow*) (*a*) 'robber, highwayman', assumed to be a late derivation from *howłk** 'wagon'.[9] Simon (2013: 105) rejects a proposal that *howłk** is a borrowing from Hit. *ḫuluganni*- 'wagon', but proposes that the Armenian word could have been borrowed from Hu. **ḫulug*(*a*)- which also served as a source for the Hittite word. However, this established loanwords show the substitution *ḫ* → *x*. Moreover, it is to be expected that trisyllabic **ḫuluga* or *ḫulugi* would have become paroxytone in Armenian, and thus yielded **xłowg* or *xłowk* after the syncope and vowel weakening.

II 45. *նէր nêr* (*i*) 'sister-in-law' ← Hu. *nera* 'mother' (Łapᶜancᶜyan 1951: 582–3, Greppin 1982: 145) The Hurrian word is usually considered a derivation of *ne/ir*- 'good' (BGH 275). The semantic shift 'mother' > 'sister-in-law' is unlikely and the substitution *e* → *ê* (originally a diphthong **ei*) is not accounted for. Despite several

[9] There is no way to confirm the meaning of *howłk**. The meaning may also have been 'road', cf. HAB III: 121, where the parallel NP *rāhzan* 'robber' from *rāh* 'road' is offered.

formal uncertainties, the Armenian word is usually assumed to continue PIE *(h_1)i̯enh$_2$tḗr* (cf. Lat. *ianitrices*, Skt. *yātar-* 'sister-in-law') (Olsen 1999: 190–1, EDA 503–5; more sceptical Kölligan 2012: 142–4).

II 46. **տոլի** *toli* (*ea*) 'grapevine' (var. *towyli*) ← Ur. *uduli*, *uldu* 'vineyard' (Łapᶜancᶜyan 1961: 137, Bănățeanu 1962: 270). These forms may ultimately be connected, as they seem to reflect the same *Wanderwort*, cf. also Udi *tul* 'grape', Arab. *davāli* 'a kind of grape' (HAB IV: 416), but a direct loan from Urartian is unlikely due to the irregular sound substitution *d* → *t*.

II 47. **շէրտ** *šert* (*i*) 'woodchip, splinter' ← Ur. *šer*(*i*)*du-* "cleave" (Łapᶜancᶜyan 1961: 136). The substitution *š* → *š* is unexpected (cf. e.g. *san*, II 7), and the meaning of the Urartian word is rather 'conceal' vel sim. (Salvini 2018: 412). The Armenian word might reflect **sk*(*H*)*ed-r*(*i*)- (cf. Li. *skedervà* 'splinter' and perhaps Arm. *cᶜtem* 'to cut, scratch'), although the change of PIE **sk*(*H*)- > Arm. *š-* is controversial (see IEW 919, Olsen 1999: 91, EDA 629).

II 48. **ողջ** *ołǰ* 'whole, healthy' ← Ur. *ulgu** 'life' (Greppin 1982: 72). As observed by Simon (2023: 67), the Urartian form *ulguše* 'life' is only attested with the spelling ⟨gu⟩, which renders the required phonological interpretation **/oljo/ impossible. The Armenian word must reflect PIE **sol-i̯o-* 'whole', cf. Skt. *sárva-* 'whole' < **sol-u̯o-* (EDA 531).

II 49. **ուրուս** *owrow* (*a*) 'vision, illusion' ← Ur. *uruli* (Łapᶜancᶜyan 1961: 138–9). The equation is based on an obsolete interpretation of the Urartian word, which is a form of the verb *uru-* 'dig out, excavate' (see now Salvini 2018: 423).

II 50. **պախրէ** *paxrē* (*i*) 'cattle, provisions, money' (dial. 'ox') ← Ur. ^{GU_4}*paḫini* 'cattle' (Łapᶜancᶜyan 1961: 135). The assumed suffix *-rē* (as if < **-reį̄*) cannot be equated with any Hurro-Urartian derivational suffixes. The Armenian form, and especially the variant *paxray*, are closer to Syr. *baqrā* 'flock' (cf. HAB IV: 7), but the direct source of these words remains unidentified.

II 51. **սէր** *sêr* (*o*) 'love, affection' ← Hu. *še/ir-* 'pleasant' (Łapᶜancᶜyan 1951: 594–5). The Armenian word rather reflects **ḱei-ro-* or **ḱei-ue-ro-*, cf. Skt. *śeva-* 'dear' (Olsen 1999: 30–1).

II 52. ***սուր*** *sowr* (*o*) 'sword, knife; sharp, acute' ← Ur. $^{(GIŠ)}$*šuri* 'spear' (Bănăţeanu 1962: 268–9, Greppin 1991: 726, Arutjunjan 2001: 465, Yakubovich 2016a: 158). The Urartian word is cognate with Hu. *šauri* 'weapon'. While the equation of the Urartian and Armenian words appears superficially satisfactory (despite the slight semantic disagreement), the Armenian word can also reflect PIE **ḱeh₃ro-*, cf. Lat. *cōs, cōtis* 'whetstone', YAv. *saēni-* 'point', from the root 'to sharpen' (HAB IV: 254, Olsen 1999: 55, LIV^2 319–20). This etymology better accounts for the Arm. *o*-stem, as well as the adjectival meaning 'sharp', which is unlikely to be secondary to 'sword'. A borrowing from Armenian to Urartian is excluded by the existence of a Hurrian cognate.

II 53. ***սերկեւիլ*** *serkewil* (*i*) 'quince' may be related to Akk. *sapargillu*, *sapurgillu*, *supurgillu* 'quince'. This is obviously a foreign word, but not the immediate source for Armenian. Diakonoff (1985: 599b) and Greppin (2011: 294) speculate that the immediate donor of this word was Hurro-Urartian, but this is impossible to substantiate.

II 54. ***տարմաջուր*** *tarmaǰowr* (*o*) is ostensibly a compound of *tarm** 'flock of birds' and *ǰowr* 'water'. It is a hapax in the *Geography* by Vardan Arewelc^{c}i, where it is described as a flowing water, which is always followed by birds who eat locusts (HAB IV: 387). Greppin (1990–1991: 19) suggests that the *tarm* that appears in this compound is in fact an etymologically distinct word, which is borrowed from Hu. *tarmane* or Ur. *tarmani* 'source, spring'. The original meaning of *tarmaǰowr* would thus be 'spring water', and the meaning in Vardan would be the result of folk etymology (cf. Mahé 1990–1991: 26–7, EDA 608 fn. 128). This assumption remains highly conjectural in light of the poor attestation of this word and lack of a better understanding of the underlying mythological motives. Hrach Martirosyan (p.c.) suggests a relationship with NP *tarmašīr* 'a species of elixir', MP **tarmašīr* (→ Syr. *tarmašir*, *tarmašig* 'dittany'; Ciancaglini 2008: 186–7), which, again, would require the assumption of folk etymology. For further discussion of *tarm** 'flock, swarm; starling' and its derivatives, see EDA 607–8.[10]

[10] In toponyms, Arm. *t-* usually replaces Ur. *ṭ-*, e.g. *Tosp* ← ^{URU}*Ṭušpa-*. If the Urartian opposition *ṭ* : *t* reflects a contrast between glottalized and aspirated stops (cf. Wilhelm 2008: 107–8), we should expect Ur. *t-* to be replaced by Arm. *t^{c}-*. I thus wonder whether Arm. *t^{c}arm* 'fresh' (a late word, cf. Norayr 566–7) is borrowed from

II 55. 𒌑𒌅𒁕𒌑 *towłt* (*o*) 'marshmallow, althea' ← Hu. *tuldu* (Diakonoff 1985: 599–600). This word is a hapax in an Akkadian wordlist, where it is glossed *ladīru*. The Akkadian gloss was assumed by Diakonoff to designate some medicinal plant, but actually means 'worm, maggot' (CAD XVIII 467, Simon 2023: 79)

2.2 Results

The most probable loanwords from Hurrian or Urartian are listed in Table 2.1. Uncertain and/or conjectural loanwords are listed in Table 2.2. For further discussion of this material, see § 2.4. It is clear from the results of this survey that the number of Hurro-Urartian loanwords in Armenian is relatively small. Only eight words can be said to be of Hurro-Urartian origin with sufficient confidence. An additional eleven words cannot be excluded to be Hurro-Urartian loanwords, but neither can they be positively confirmed. The limited size of both the Hurrian and Urartian corpora means that the actual number of loanwords may have been higher, so that undetected Hurro-Urartian loanwords may still exist in the Armenian lexicon. Moreover, it is probably reasonable to assume that some loanwords were replaced by even younger loanwords prior to the attestation of Armenian.

Armenian	**Hurrian/Urartian**	**Lemma**
ałiws 'brick'	Hu. *alipši* 'mudbrick'	II 1
darbin 'blacksmith'	Ur. **dabrini* 'blacksmith'	II 2, IV 28
xałoł 'grape'	Ur. *ḫaluli* 'grape' or Hu. *ḫaluli* 'id.'	II 3
xarxarem 'destroy'	Ur. *ḫarḫar-* 'destroy'	II 4
xnjor 'apple'	Hu. *ḫinzuri* 'apple'	II 5
pełem 'dig', **peł* 'canal'	Ur. *pili* 'canal'	II 6
san 'kettle'	Ur. *šani* 'a container	II 7
pᶜox(-) 'loan, exchange'	Ur. *puḫ-* 'change, alter'	II 8

Table 2.1: Hurro-Urartian loanwords in Armenian

Ur. *tarma**, assuming that *tarma-ni* is a nominalized adjective with the suffix *-ni* (cf. Salvini 2018: 488). Semantically, this obviously requires a few unsupported assumptions. J̌ahowkyan (1987: 425) assumes a borrowing from Armenian to Urartian, but the Indo-European background of Arm. *tᶜarm* is not clear (?< **tr-mo-*, traditionally compared with Skt. *táruṇa-* 'young, fresh', Gk. τέρην 'tender'; HAB II: 161).

Armenian	Hurrian/Urartian	Lemma
ałaxin 'maidservant'	Hu. **alla-ḫḫi-nni* 'belonging to the lord'	II 9
anag 'tin'	Hu. **anagi* 'id.'	II 10
ananowx 'mint'	Hu./Ur. **ananuḫḫi*	II 11
babay 'hill' (?)	Ur. *baba** 'mountain'	II 12
don 'a kind of bread'	Ur. **doni* 'id.'	II 13
cic 'breast'	Hu. *zizzi* 'id.'	II 14
maxr 'pine'	Hu. *maḫri* 'id.'	II 15
nowṙn 'pomegranate'	Hu. *nuran** 'id.'	II 16
owłt 'camel'	Ur. **ulṭu* 'id.'	II 17
salor 'plum'	Ur. **salor-* 'id.'	II 18
towpᶜ 'box'	Hu./Ur. **tup(p)-* 'id.'	II 19

Table 2.2: Uncertain Hurro-Urartian loanwords in Armenian

2.3 Armenian loanwords in Urartian?

A complete critical revision of suggested Armenian loanwords in Urartian is outside the scope of this work (see Simon 2023 for a comprehensive treatment). Nevertheless, I shall present four of the most frequently cited and strongest cases below. While I maintain that these four words are possible loans from Armenian, I fundamentally agree with the interim conclusion of Simon (2023: 83): "there are no assured Armenian loans in Urartian". That said, I also agree with the observation that there is no *a priori* reason to reject the possibility of such loanwords (Simon 2023: 80 fn. 168, *contra* Schmitt 2012: 126). Still, if they exist, the amount of Armenian loans in Urartian is clearly smaller than the amount of Hurro-Urartian loans in Armenian.

II 56. Ur. *abilidu-* 'to gather' ← Arm. *y-awelowm* 'to add, increase', *aweli* 'more'. Taken as a loan from Urartian to Armenian by Łapᶜ-ancᶜyan (Łapᶜancᶜyan 1940: 38, 1961: 132–3). He rejects the established comparison with Gk. ὀφέλλω 'increase, sweep' and ὀφέλμα 'broom', of which the latter has a semantic counterpart in Arm. *awel* 'broom' (see Clackson 1994: 156–8), as he claims that the expected form would be **obel* or **abel*. This is, however, clearly false as the reflex of intervocalic **-b^h-* is *-w-*. In view of the impeccable Greek-Armenian root comparison **h_3b^hel-* 'sweep, increase', it is unlikely that Armenian borrowed any of these forms from Urartian.

It remains possible that the Urartian verb is somehow a borrowing from Armenian, but the substitution of Arm. *e* by Ur. *i* is unexplained, which could suggest that *-il-* rather represents an Urartian verbal suffix (cf. Simon 2023: 80 with references).

II 57. Ur. *amani* 'pot, container (?)' ← *aman* (*o*/*a*) 'vase, pot'. The meaning of the Urartian word is uncertain (see Arutjunjan 2001: 434). The Armenian word is usually compared to Skt. *ámatram* 'drinking bowl' and Gk. ἄμη 'shovel, pail' (Hübschmann 1897: 416). This allows for a possible reconstruction **h*$_2$*emH-no-* or **h*$_2$*em-n̥no-* (Olsen 1999: 296). Since this etymology is not completely certain, we may also be dealing with an Urartian loanword into Armenian, but the equation of these words remains uncertain as long as the meaning of the Urartian word cannot be verified.

II 58. Ur. *burgana** (always PL *burgana-ni*) 'some kind of building'[11] ← Arm. *bowrgn* (*-ownk^c*, *-anc^c*) 'tower, pyramid' < **burgan-*. This equation is often considered to reflect a borrowing in the opposite direction, from Urartian to Armenian (e.g. J̌ahowkyan 1987: 430–2). However, the expected Armenian reflex would be ***burgan* > *brgan* (Perikhanian *apud* Diakonoff 1985: 602b).[12] Moreover, it seems very likely that Arm. *bowrgn* is somehow connected to Gk. πύργος 'tower', suggesting that it predates Armenian contact with Urartian (see IV 20 for further discussion). All in all, this means that if the Urartian and Armenian words are related, the donor language was most likely Armenian (cf. also Diakonoff 1985: 602b, EDA 246 s.v. *durgn*). Still, the comparison remains uncertain because the meaning of Ur. *burgana* cannot be established with certainty. Despite the apparent

[11] The meaning is very unclear, but appears at least to refer to an edifice of importance since it is relatively frequent (15 times in total) in the inscriptions commemorating the achievements of Urartian kings. Salvini (2018: 384) assumes we are dealing with a construction meant for sacrificial animals ("uno stabilimento dove si raccolgono gli animali destinati al sacrificio"), i.e. a kind of pen. Diakonoff & Starostin (1986: 99), in an addendum, corrects the meaning from 'tower' to 'column, pillar' but do not specify what this is based on. It is possible that they assume the *burgana** to be a kind of stela demarcating the territory belonging to Urartu. An inscription of Išpuini (CTU A 03-11, l. 20–22) tells of *burganani* that were built next to a gate (KÁ) of the god Ḫaldi which would also harmonize with a meaning 'tower'.

[12] We might imagine that, at a later stage, such a form would have been analyzed as a GEN-DAT-LOC.SG of an *n*-stem and given rise to a new, back-formed nominative. In such a case, however, I assume that oblique *-an-* would have prevailed across the entire paradigm. Instead we find NOM.PL *brgownk^c*, ACC.PL *brgowns*.

lack of an attested cognate in Hurrian, it cannot be excluded that the Urartian word is native, in which case its similarity to the Armenian form would be due to chance.

II 59. Ur. *qaburza-ni-li* (DEF.PL) 'bridges'. Appears once in an inscription from Bulutpınar, East Turkey (Çavuşoğlu, Işik & Salvini 2010). The stem *qaburza-* would match PA **kaburǰa-*, cf. Arm. *kamowrǰ* 'bridge', Gk. γέφῡρα 'bridge; beam; dam, dyke' (Petrosyan *apud* EDA 353).[13] This would mean that the *-m-* of the Armenian form is secondary. For further discussion, see IV 46.

2.4 Analysis

The attestation of the Urartian language ends around 700 BCE. Thus, we would *a priori* expect that the contact between Armenian and Urartian had ended at this point. Naturally, it is impossible to exclude that Urartian, Hurrian (or unknown cognate languages) were spoken for some time after the end of their textual transmission (cf. Simon 2023: 68). Nevertheless, the small corpus established in the previous allows us to date the Armenian-Hurro-Urartian contact prior to the following sound changes:

- The loss of final syllables is seen in all of the most probable loanwords from Hurro-Urartian, e.g. *xałoł* (II 3).
- The reduction of pretonic **i* and **u*, cf. *xnjor* (II 5), perhaps *nowṙn* (II 16). No evidence for diphthongs.
- The metathesis of the clusters **TR* and **DR*, cf. *darbin* (II 2).
- The lenition of **VpC* > *VwC*. The only example in this corpus is *ałiws* (II 1), but note the TN Ur. *Zabaḫae* → Arm. *J̌avax-kᶜ* (Diakonoff 1985: 601).

Especially the latter two sound changes are relevant, as these must have stopped operating before the first Iranian loanwords enter Armenian. A reasonable *terminus post quem* for the onset of Iranian-Armenian language contact is the expansion of the Medes into the Armenian Highland in the seventh century BCE, and certainly, the establishment of the Achaemenid Empire in

[13] Additional evidence for the identification, at least in some cases, of the Urartian consonant *z* with /dʒ/ comes from the placename *Zabaḫae* reflected in Arm. *J̌avaxkᶜ* (Diakonoff 1971: 48 fn. 46).

550 BCE. This approximate dating is consistent with the *a priori* assumption that Urartian-Armenian contact had ended at this point. With regard to most of the other sound changes between PIE and Armenian, it can be surmised that they had taken place at this point. However, the material yields very little positive evidence for this. On the basis of Arm. *don* 'bread' (II 13), it appears that the raising of **oN* > *uN* (and by extension, probably **eN* > *iN*) had already taken place. While this etymology admittedly comes with caveats, additional support for the chronology comes from the TN Ur. *Quṭumu-* > Arm. *Kotom*.

2.4.1 The chronology of the sound shift

The Armenian sound shift is of crucial interest to the chronology of sound changes in relation to the Armenian-Hurro-Urartian language contact. It is usually assumed that the sound shift had ended when the first Hurro-Urartian words were borrowed by Armenian (thus Diakonoff 1985). Indeed, this is the assumption that best fits the data in our corpus. Simon (2023) takes a different position, namely that the entire period of contact with Hurrian and Urartian predated, at least, the Armenian shift of *mediae* to *tenues*. This view is solely based on another assumption – supported by many previous scholars – that the earliest Iranian borrowings undergo this sound change as well, and that the first Iranian loans cannot be older than ca. 600 BCE. However, the actual evidence for this claim is questionable. Arm. *partēz* 'garden' appears to be a loan from an Old NW Iranian form, matching Av. *pairi-daēza-* 'enclosure, garden', NP *pālēz* 'orchard'. This *Paradebeispiel* has been widely cited since Meillet (1911: 250). It is remarkable, however, that the initial *p-* did not shift to ***h-* in this word. Therefore, it is necessary to assume that the change of *mediae* to *tenues* was chronologically distinct from the change of *tenues* to *aspiratae* (Lamberterie 1978: 249–50). To be sure, it is conceivable that these sound changes were not entirely contemporaneous, and at any rate, T > TA cannot be later than M > T (since T and TA do not merge). On the other hand, it is remarkable that in this and most other examples of early loanwords from this period, the affected stop also follows a resonant, cf. *xałtikᶜ* 'Chaldeans' against Gk. χάλδοι, OGe. *kaldev-el-* (Meillet 1911: 250); and especially the variant forms *əngoyz*, *ənkoyz* 'walnut' (← Ir. **ni-gauza-* → Ge. *nigoz-* 'walnut'; Gippert 1993: 155–66). For that

reason, we may suspect that it is exactly the resonant that caused the ostensible change of voiced to voiceless stop (Vogt 1938: 329, Gippert 2005: 155).[14]

Another word that is commonly assumed to precede the Armenian sound shift is *arcat^{c}* 'silver' if from Ir. **ard^{z}ata-* (< PIE **$h_2$erǵnto-*). This word would observe a change of the *media *j* to the *tenuis c* (Lamberterie 1978: 245–51). However, we must also account for a change of **-t-* to *-t^{c}-*, which requires that old intervocalic **-t-* was already at a stage **-ϑ-* or *-y-* but initial **t-* had not yet become *t^{c}-*. See now Kümmel (2017) on the possibilty Arm. *arcat^{c}* is inherited from PIE **h_2rǵnto-* after all. Finally, Arm. *t^{c}šnami* 'enemy' (← **dušman-*) and *t^{c}šowaṙ* 'miserable' (← **dušfar-*) are irrelevant to the question, because the change of **d-* to aspirated (!) *t^{c}-* is simply caused by voicing assimilation, which followed the weakening of pretonic **u* (cf. *k^{c}san* 'twenty' < **gisan* < **u̯iḱmti*).[15]

As additional evidence for the claim that the influx of Hurro-Urartian loanwords preceded the Armenian sound shift, Simon (2023: 68) adduces Arm. *p^{c}oxem* 'loan, exhange' ← Ur. *puḫ-* 'change', as well as the toponym *Cop^{c}-k^{c}* ← Ur. *Ṣupa*, which he considers to show a change of **p* to *p^{c}*. Consequently, he considers an otherwise compelling loanword like Arm. *peł-em* 'dig' ← Ur. *pili* 'canal' to be uncertain. Against these claims, we must note that the outcome of initial PIE **p-* is always Arm. *h-* or ∅- (with **p^{c}-* or **f-* being merely an intermediate stage). This means that the postulated change of **p* > *p^{c}* in these examples would have to be independent of the sound shift *per se*, and thus appears illusory. A different explanation is necessary for the ostensibly divergent treatments of Urartian ⟨p⟩. We must note that Urartian employs the Akkadian so-called "emphatic" signs ⟨ṭ⟩ and ⟨q⟩ to represent a particular series of stops. Although we cannot be certain about their realization, they are evidently distinct from the phonemes written ⟨t⟩ — ⟨d⟩ and ⟨k⟩ — ⟨g⟩

[14] I wonder if the substitution **RD* → *RT* was considered more appropriate because voiced stops after resonants were perceived as aspirated at this time. The assumption that the old cluster **RT* went through **RT^{h}* > **RD^{h}*, before becoming *RD*, has been used to explain why it did not coalesce with **RD* > *RT* (Lamberterie 1973–1974).

[15] Olsen (1999) suggests three additional pre-sound shift loans, which I must discard in light of the discussion above and due to the inexact semantic matches: 1. Arm. *parc* 'proud' ← Ir. **bardz-* 'high' (1999: 857, 904); 2. *atean* 'court, council; time' ← a derivative of **√had-* 'sit' (1999: 959); and 3. *ciran* 'apricot', cf. Av. *zaraniia-* 'gold' (1999: 450). The latter is better understood as a *Wanderwort* (see p. 87).

respectively, and thus represent a third (perhaps glottalized) series of stops (Wilhelm 2008: 107–8). As for labial stops, however, Akkadian does not have an emphatic variant of /p/, so only the signs ⟨p⟩ and ⟨b⟩ are found. Unless we make the *a priori* unlikely assumption of an identical gap in the Urartian stop system, it is likely that the grapheme ⟨p⟩ was used to represent at least two phonemes, e.g. a glottalized /p‘/ and a plain or aspirated labial stop /p$^{(h)}$/. I assume that it is this contrast that gave rise to Arm. *pełem* and *p^{c}ox*, respectively. With these examples in mind, we can also deduce that Armenian-Hurro-Urartian contact took place *after* the lenition of initial **p^{h}-* (< PIE **p-*) > *h-*, and the emergence of a new phoneme *p^{c}* from the inherited sequences **pH-*, **sp-* (?) etc.

I conclude that the sound shift had been completed before the onset of Armenian contact with Hurro-Urartian.

2.4.2 Semantics

A semantic analysis of the loanwords found to be probable (cf. § 2.1.1) or uncertain/conjectural (cf. § 2.1.2) supports a hypothesis of a brief and superficial contact situation. With the exception of *p^{c}ox* ‘exchange’, these lexemes can be categorized in the broader category of “culture words”, with a more detailed classification as follows (the most probable cases are boldface).

- Technical terms (4–7): ***ałiws* ‘brick’**, ***pełem* ‘dig, *canal’** (architectural); ***darbin* ‘smith’**, *anag* ‘tin’ (metallurgical), ***san* ‘kettle’**, *don* ‘bread’ (cooking); *towp^{c}* ‘box’.
- Flora (2–7): ***xałoł* ‘grape’**, ***xnjor* ‘apple’**, *ananowx* ‘mint’, *maxr* ‘pine’, *nowṙn* ‘pomegranate’, *salor* ‘plum’.
- Verbs (2): ***xarxarem* ‘destroy’**, ***p^{c}ox*(-) ‘exchange’**.
- The body and the natural world? (0–3): *babay* ‘hill’, *caṙ* ‘tree’, *cic* ‘breast’.
- Social stratification? (0–2): *ałaxin* ‘maidservant’, *caṙay* ‘slave’.
- Fauna? (0–1): *owłt* ‘camel’.

This indicates a contact situation in which Urartian constituted a relatively weak superstratum in relation to Armenian. It introduced words denoting novel concepts, but did not deeply influence the basic Armenian lexicon. If that were true, we would expect to

find words belonging to the basic vocabulary, as well as more adjectives, verbs, and function words, as in the case of the later Iranian superstratum. These observations harmonize with the prevailing view (e.g. Zimansky 2001) that the Urartian government was a short-lived administration imposed upon a multilingual and multicultural population. Finally, this is supported by the fact that we find only very few, if any, Armenian loanwords in Urartian.

2.4.3 Context

We can mostly speculate regarding the duration and exact nature of this contact. A key question in this regard is whether Armenian ever had any direct contact with Hurrian, or whether Armenian words with matches only in Hurrian (in particular *ałiws*, II 1; *darbin*, II 2; and *xnjor*, II 5) were in fact mediated through Urartian. In the case of *darbin*, it is clear that Urartian must have been the source language, as shown by the voicing of the initial consonant, but in the other two cases, the Hurrian and Urartian forms would most likely have been identical. Although it is an *argumentum ex silentio*, the fact that no historic evidence supports the presence of Armenian speakers close to Hurrian speakers suggests that also these words are loans from Urartian (cf. Greppin 1991). Indeed, we find no linguistic evidence for a dialectal or chronological stratification of the Hurro-Urartian loans. By all accounts, the duration of contact may thus have been relatively brief.

Kartvelian 3

Kartvelian (also known as South Caucasian) is a small language family confined to the Caucasus region and its immediate surroundings. Four standard languages with respective dialectal subdivisions are distinguished. These languages are Georgian, the official language of the Republic of Georgia; Svan, spoken in the Svaneti region of northwestern Georgia; Megrelian (also spelled Mingrelian), spoken in the westernmost part of Georgia; and Laz, spoken along the Black Sea coast south of Batumi, mostly within the modern-day Republic of Turkey. Small pockets of Laz people also reside further to the south, west of Lake Van, and in and around Istanbul. Megrelian and Laz are collectively called the Zan languages. They show a high degree of mutual intelligibility and have often been considered dialects of a single language, Zan (Ge. *zanuri*) or "Colchian" (Ge. *ḳolxuri*). However, the modern distribution of these languages and their division across political boundaries has led to a convention of referring to them as separate languages. There is wide consensus about the internal subdivision of the Kartvelian family (see Harris 1991). Georgian and the Zan languages form a subgroup called Georgian-Zan (GZ, also known as Karto-Zan). This means that higher-order split is between Georgian-Zan and Svan. A tree depicting this simple phylogeny is shown in Figure 3.1.

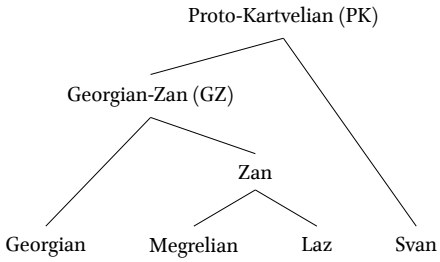

FIGURE 3.1: Phylogeny of the Kartvelian languages

Georgian is attested in the form of Old Georgian already since the fifth century CE, that is around the same time as the earliest attestations of Armenian. Like many of the other languages of the Caucasus, the remaining Kartvelian languages have no longstanding literary tradition, and their description thus began as late as the seventeenth century CE in the form of word lists collected by traveling explorers and merchants.[1] This naturally limits the understanding of their historical development, in particular that of the formally more divergent Svan. However, it appears that the divergence between Georgian and the Zan languages is not overly large and mostly characterized by transparent sound laws. Some key sound changes among these are covered in § 3.1.

Despite the relatively shallow time-depth separating the Kartvelian languages, as compared to the Indo-European, the location and dating of the Proto-Kartvelian and Proto-Georgian-Zan proto-languages remains disputed. Due to the paucity of early historical records from Transcaucasus, any hypothesis about the Kartvelian homeland and dispersal is forced to rely mainly on the scant documentation in Hittite, Assyrian, and Urartian sources.

By the beginning of antiquity, the present Kartvelian-speaking area was the home of two independent nations: Iberia (or Kartli) and Colchis (or Egrisi), roughly corresponding to the modern Georgian-speaking and Zan-speaking areas. The state of Colchis was in close contact with the Greeks, who established several trading colonies on the eastern Pontic coast. In Greek mythology,

[1] See Tuite (2008) for an account of early linguistic research in the Caucasus.

it is particularly famous for being the destination of Jason and the Argonauts in their search for the Golden Fleece. One of the larger Greek towns here, Φᾶσις, known already in Hesiod (ca. 700 BCE), can probably be identified with the modern day city of Poti, located at the mouth of the river Rioni. The Greek form of this place name suggests that its input **pʰati-* antedated the Greek assibilation **ti* > *si* on the one side, and the Zan vowel shift of **a* > *o* on the other (Schmidt 1962: 27, Gippert 2005: 154). It thus provides a *terminus post quem* for the latter change and an approximation of the time of the linguistic division of Zan from Georgian. Rayfield (2012: 17–8) emphasizes the events leading up to the fall of Urartu in the eigth and early seventh centuries BCE, when Transcaucasia and Anatolia were overrun by Cimmerian and Scythian invaders. This, he claims, caused a power vacuum that enabled Georgian-speaking groups to expand towards the Black Sea coast, effectively splitting the Zan-speaking area in two and giving rise to the current geographic separation of Megrelian and Laz. However, considering the aforementioned evidence of Gk. Φᾶσις and the close proximity between the Zan languages, it seems likely that shared Zan innovations still took place after the seventh century BCE. Certainly, a definitive cause of isolation between the two Zan groups would have been the later westward migration of Georgians due to Arab invasions in the seventh century CE.

3.1 Phonology

This section presents the most important phonological changes separating Georgian from the Zan languages. Here and in the following, the transliteration system applied to Kartvelian forms differs from the International Phonetic Alphabet and the Hübschmann-Meillet-Benveniste (HMB) system of Armenian transliteration in several respects. The character ⟨ძ⟩, which represents /dz/ (Armenian HMB *j*), is transliterated as *ʒ*. Its palatoalveolar counterpart ⟨ჯ⟩ (/dʒ/, Armenian HMB *ǰ*) is transliterated as *ǯ*. Contrary to the traditional transliteration of Armenian, stops and affricates without diacritics (*p, t, k, c, č*) represent the voiceless aspirated series ⟨ფ თ ქ ც ჩ⟩, while the sounds of the voiceless glottalized series ⟨პ ტ კ წ ჭ⟩ are marked with a diacritical dot (*ṗ, ṭ, ḳ, ċ, ċ̌*).

3.1.0.1 Vowels

The Proto-Kartvelian vowels **e* and **a* are generally preserved in Georgian and Svan, but Zan regularly shifts **e* > *a* and **a* > *o*. Compare 1) Ge. *rʒe*, Sv. *ləže*, Laz *bžа*, Meg. *bža* 'milk'; 2) Ge. *ḳaci* 'man', Sv. *ç̌aš*, Zan *ḳoç̌i* 'husband'. Word-finally PK **a* is preserved, however. PK **o* is usually preserved in Zan, but is raised to *u* in specific labial environments (Harris 1991: 13). This change affects also **o* from PK **a*, cf. Ge. *sami*, Zan *sumi* 'three'. Zan shows umlaut of **a* > *e* when a front vowel appears in the next syllable, cf. *Ge laši*, Meg. *lečkvi* 'lip'.

3.1.0.2 Sibilants and affricates

Like Armenian, all Kartvelian languages have two series of sibilant-affricates: a dental-alveolar, 'hissing' series (symbolized *S*) and a palato-alveolar 'hushing' series (symbolized *Š*). Both of these series have voiceless (aspirated) and voiced phonemes, while the affricates also have glottalized variants, mirroring the distribution of stop consonants. However, the correspondence between these series within the Kartvelian family is not parallel. An isogloss separates the Zan and Svan branches on the one side from Georgian on the other. Note the correspondence sets in Table 3.1.

	I	II	III
Georgian	*s, z, c, ʒ, ç*	*s, z, c, ʒ, ç*	*š, č, ǯ, č̣*
Zan	*s, z, c, ʒ, ç*	*š, ž, č, ǯ, č̣*	*šk, čk, ǯg, č̣k*
Svan	*s, z, c, ʒ, ç*	*š, ž, č, ǯ, č̣*	*šg, čk/šg, ǯg, č̣ḳ/šḳ/h*

Table 3.1: Correspondences of Kartvelian sibilants and affricates

These correspondences present at least two possibilities for the reconstruction of the Proto-Kartvelian system. One view, proposed by Maçavariani (1965) and Klimov (1964), and also employed in the etymological dictionary of Fähnrich (2007), holds that Proto-Kartvelian possessed three series of sibilants and affricates. For correspondence sets I and III, the reconstructed phonemes match their Georgian reflexes, i.e. **S* and **Š* respectively. For correspondence set II (*S* in Georgian, *Š* in Zan/Svan), an intermediary type of sibilant is reconstructed, called *sisini–šišini* 'hissing–hushing', and

variously notated as *S_I, *$\acute{S}$, or *S^j. Several objections can be raised against this reconstruction. First of all, a phonological system with such a large number of articulatorily close fricatives may seem typologically unusual. This is not the most important objection, however. A three-way opposition of sibilants can be found in, e.g., Polish and Serbo-Croatian, while a four-way opposition (i.e. /s/, /ŝ/, /ʂ/, /ɕ/) is known to Ubykh (West Caucasian). A more serious problem with the reconstruction, however, is the putative development of the *Š*-series in Zan and Svan, where it corresponds to clusters *ŠK*. The velarization and fortition of a sibilant or affricate into a stop cluster is not phonetically impossible, but the opposite development is far more common typologically. At the same time, the rarity of such a development makes it all but necessary to assume that it did not happen independently in the Zan and Svan languages. Still, these two branches cannot be considered to form a subgroup within Kartvelian. Therefore, the reconstruction of a three-way distinction of sibilants and affricates in Proto-Kartvelian leads to the assumption that the "Western" dialects, Zan and Svan, formed a temporary *Sprachbund* after the dissolution of the proto-language. There are no other certain indications that this was the case, however. One way to circumvent the problem is to assume that the *Š* series was velarized already in Proto-Kartvelian (thus *$Š^y$), but the fortition of the velar element in all positions is still a significant phonological innovation that could hardly have taken place independently. Furthermore, a system *S, *S^j, *$Š^y$, where only the palatal series is also velarized, is quite strange. A system *S, *S^j, S^y is more realistic, but it would render unexpected the development to Georgian *S*, *S*, *Š*, where the velarized series palatalizes, but the palatalized does not.

As a result of these problems, an alternative scenario is proposed by Schmidt (1961, 1962: 54–67, 1978), who holds that Proto-Kartvelian possessed only two series of sibilants and affricates: *S and *$Š$ reflected by correspondence sets I and II respectively. For correspondence set III, on the other hand, the clusters found in Zan and Svan are considered to be inherited from Proto-Kartvelian *$ŠK$. Schmidt envisages a push chain where Georgian simplified these clusters, followed by the merger of PK *S and *$Š$. This theory has the benefit that it only one, relatively late, change in Georgian needs to be assumed. It avoids the postulation of a phonetically unusual Zan-Svan isogloss. The principal downside to Schmidt's reconstruction is the very small number of cases where a *ŠK*-cluster seems to

have been maintained in Georgian. A straightforward explanation for some of these cases is borrowing from Zan, but the exact conditioning may be obscured by the rather limited material.[2] Another potential problem is Ge. *švid-*, Zan *škvit-*, Sv. *i-šgwid* '7', which is allegedly a Semitic loanword (cf. Ass. *šibittu* < Proto-Semitic **šabʕ-*). If so, it would reveal the secondary nature of the *ŠK*-clusters as the input must have been something like **šiwit-*. Even if the loan hypothesis is true, however, it could be that PK **škwit-* reflects a metathesis of ***šiwkit-* where **k* substitutes the glottal stop in **šiwʕit-* (cf. Testelec 1995). Alternatively, Georg (2002) assumes that the Zan and Svan forms were influenced by the numeral '6' (Ge. *ekvs-*, Meg. *amšv-*, Sv. *usgwa* < PK **ekśw-*), thus **ekśw-* : **šwid-* ⇒ **ekśw-* : *škwid-*. After all, however, I find it most probable that the Kartvelian and Semitic numerals are simply unrelated.

Notwithstanding these minor caveats, I believe the reconstruction of clusters and two series of sibilants and affricates for Proto-Kartvelian is the most economical and phonetically realistic solution (see also Manaster Ramer 1994, Testelec 1995). Out of convenience, I follow the notation *S*, *Ś* (= /Š/), and *Š* (= /ŠK/) in order to allow for easier comparison with the etymological dictionaries. However, the underlying phonetic reality of these symbols plays an important role in the research on loanwords and will be taken into account where it is relevant.

3.1.0.3 R-affrication

Proto-Kartvelian **r* yields *ǯ* in both Zan languages in the position between any vowel and *i*, which frequently appears as the NOM.SG ending of consonant stems: GZ **mćer-* > Ge. *mçer-* 'insect', Meg. *mčaǯ-* 'fly'; PK **pur-* > Ge. *pur-*, Sv. *pirŵ*, Zan *puǯ-* 'cow' (for details, see Schmidt 1962: 77). The split of the PK phoneme **r* is clearly seen in GZ **q̇ur-* > OGe. *q̇ur-* 'ear', Meg. *ʕuǯ-* 'ear' vs. **q̇ura* > Meg. *ʕura* 'deaf' (Laz *q̇uǯa* 'deaf' with generalized affricate). This shows that there was no separate phoneme **r*^{j} (vel sim.) but it may have been

[2] Note also that of the ten lexemes found in Klimov 1964 that begin with a *ŠK*-cluster in both Georgian and at least one other Kartvelian language, five are not attested in Old Georgian and are potential recent borrowings from Zan or Svan. Some of the remaining five have semantics that are perhaps liable to sound symbolic influence, cf. e.g. Ge. *sḳel-* 'thick, clumsy', Meg. *zirg-al-* 'clumsy'; (2) Ge. *sḳinṭl-*, *çḳinṭl-*, Zan *çḳinṭil-*, Sv. *sḳidil-* 'bird droppings'.

present as an allophone already at the Georgian-Zan stage. This is suggested by the reflex *ž* found in some Georgian dialects, e.g. Guruli, Imeruli *ḳvežo* 'wooden hammer' (presumably ⇐ **ḳveži*), cf. Ge. *ḳver-* 'hammer' (Schmidt 1962: 119).

3.1.0.4 Wucherlaute

Within Kartvelian, in particular the Georgian-Zan languages, certain sounds, especially nasals *n* and *m*, but also frequently *r*, are inserted and/or dropped word initially and before other consonants, seemingly at random. Several examples and a discussion of these so-called *Wucherlaute* (or *Fülllaute*) are offered by Deeters (1927: 8–13), Neisser (1953: 10–12), and Schmidt (1962: 89–91). Compare again Meg. *ċanǯ-*, Laz *mčaǯ-* 'fly' and Georgian *mċer-* 'insect' < **(m)ċer-*, where the insertion of *-n-* in the Megrelian form and the initial *m-* of the Georgian and Laz forms has no known morphological function or phonological conditioning. While the metathesis of *-n-* is most common in the Zan languages, the word-initial *m-* before consonants (except labials) is widespread in both Georgian and Laz – less so in Megrelian. In Proto-Kartvelian reconstructions, the initial **m-* often appears in parentheses. The origin of these *Wucherlaute* is unknown, and so is the question of whether some of them used to have morphological content or result from sound changes that are still not understood. In the following, I follow the Kartvelological tradition of treating them as etymologically irrelevant, discussing them only when it has potential consequence for the source of a loanword into Armenian.

3.2 Indo-European, Armenian, and Kartvelian

The lexical and typological similarities of Indo-European and the languages of the Caucasus is a topic with a long research history, which continues to attract interest.[3] Often in this field of research, lexical matches between Indo-European and Kartvelian are identified on the basis of formal and semantic similarities and then presented as evidence for direct contact between their respective protolanguages. Thus, some scholars have claimed to identify a

[3] See, for example, the contributions to this problem in the thematic volume 47 of the *Journal of Indo-European Studies* (2019).

quite significant number of loanwords from Proto-Indo-European into Proto-Kartvelian and Proto-Georgian-Zan (e.g. Gamkrelidze & Ivanov 1995: 774–6, Klimov 1991 and 1994a, Smitherman 2012). Subjected to closer scrutiny, many of these proposals are phonologically and/or semantically problematic, at least under the assumption of direct contact between the two proto-languages (cf. Simon 2022).[4]

Of the various sources of loanwords in Armenian, the Kartvelian languages have received relatively little attention in mainstream research. A common claim, which to some extent is justified, is that given the long neighbourship between Armenian and the Kartvelian languages, the lexical influence from the latter upon the former is surprisingly limited in comparison with the influence from Middle Iranian, Greek, and Syriac. Less justified is the slapdash way in which all of the languages north of Armenian, frequently under the common geographic header "Caucasian", have often been assigned a completely marginal role in the linguistic history of the region. Hübschmann (1897: 396) accepts exactly one loanword from a Caucasian source and does so with a rationale that might appear preposterous to twenty-first century readers: "[...] dass überhaupt die mit höherer Intelligenz und Kultur begabten Armenier den Georgiern, Albanern u. s. w. gegenüber stets mehr die Gebenden als die Empfangenden waren." However, as outdated as this phrasing appears now, the assumption that Armenian, at the time of its prehistoric expansion into the South Caucasus, was a language of higher status (i.e. a superstrate) may in essence be true, as shown by typological (especially phonological) commonalities, which are discussed below.

It seems likely that the nature of contacts between Armenian and respectively Kartvelian, Nakh-Daghestanian (ND), and West Caucasian (WC) was quite diffferent. At least, typological influence from the latter two upon Armenian cannot be demonstrated. On the other hand, lexical exchange between Armenian, Nakh-

[4] For instance, one of the most frequently cited examples is PK **dɨɣwam-* 'soil' ← PIE **dʰ(e)ǵʰom-* 'earth'. While the similarity of the forms is quite striking, the replacements **e* → **i*, **ǵʰ* → **ɣ* and **o* → **wa* are not easily explained. Moreover, the word is only found in Svan (Lašx) *dɨɣwam-* 'fruitful soil' and in Georgian (Imereti, Rača) *dɨɣvami* 'wealth', otherwise perhaps related to the toponym *Dɨɣomi* (Klimov 1994a: 51–3, Fähnrich 2007: 134). If the word actually existed in Proto-Kartvelian, we cannot really be certain whether it meant 'soil, earth' or 'property'.

Daghestanian, and West Caucasian respectively, is a severely understudied research topic, and the reconstruction of their respective proto-languages is still in its early stages. A systematic study of the contact between Armenian and these languages will probably be more fruitful when the reconstruction of PWC and especially PND (not to mention the question of their potential relationship), has been further developed. Therefore, a systematic study of loanwords from West Caucasian and Nakh-Daghestanian falls outside the scope of the present study. Nevertheless, it appears destined to become an important topic in future investigations. A few loanwords from especially Daghestanian have been identified as part of this research but are mainly discussed in Chapter 4.

In contrast, the research of Armenian-Kartvelian mutual influence has a long history with relatively positive results. Marr (e.g. 1912) provided some of the first lexical comparisons. Deeters (1926, 1927) focused especially on phonological, morphological, and syntactic 'isoglosses', but stated that lexical borrowing had been insignificant. This claim was challenged somewhat by Vogt (1938), who poses not only Kartvelian (Georgian and Zan) borrowings in Armenian, but also loanwords into Kartvelian languages from a quite early period in the development of Armenian. Łap^{c}anc^{c}yan (1952) added several more borrowings to and from Zan, many of them concerning only Armenian dialects, however. J̌ahowkyan (1973a) takes over from Vogt and focuses especially on the earliest loanwords from Armenian into Kartvelian languages, showing archaic phonological traits, in particular the preservation of the final syllable, adding to these in his later works as well (especially J̌ahowkyan 1987). A discussion of both shared typological features and loanwords is provided by Cardona (1983), while Greppin (1999) provides another useful (but non-exhaustive) overview. More recently, important contributions have been offered by Gippert (1993) on shared loans from Iranian; as well as lexical and typological considerations (Gippert 1994, 2005).

Although the scope of this work is limited to lexical exchange, I shall briefly summarize some crucial phonological and morphosyntactic features shared by Armenian and the Kartvelian languages. The following innovative features of Classical Armenian shared with the Kartvelian languages may be emphasized (cf. Deeters 1926, 1927, Schmidt 1992, Gippert 2005).

1. The Proto-Armenian paroxytone accent, followed by syncope, resulting in the fixed, oxytone accent in Classical Armenian. In the modern Kartvelian languages, accent is free, but historic syncope points (with some exceptions) to an older paroxytone accent (Deeters 1926: 47–57, cf. Meillet 1936b: 23).
2. The loss of length distinction in vowels and the lack of geminate consonants. The vowel systems of Armenian and Georgian are nearly similar, consisting of /i u e o a/ and no true diphthongs (except for a historic /ei/). Geminates cannot be reconstructed for PIE, so their absence in Armenian does not constitute an innovation and is less significant.
3. Armenian consonantal changes, including the sound shift of stops, the affrication of palatals (satəmization), and the secondary palatalization, all resulting in a system highly similar to the Georgian and Zan systems (see Table 3.2). This is arguably the most significant agreement between the two languages (cf. Gippert 2005: 142–4).
4. The Armenian metathesis in clusters of old mediae (aspiratae) and resonants has parallels in Megrelian, cf. Meg. *orko* vs. Ge. *okro* 'gold'. Since this change is not universal within Kartvelian, it seems possible that the Megrelian changes is the result of Armenian influence, or influence from a shared substrate, rather than the opposite. On the possiblity that the Armenian metathesis happened under the influence of Urartian, see Kassian & Yakubovich 2002: 46.
5. The complete loss of IE grammatical gender, which is also absent in the Kartvelian languages. At the same time, Hurro-Urartian languages also lack grammatical gender, but note, in contrast, the Nakh-Daghestanian languages, where only a few languages lack gender and as much as eight noun classes are found in Batsbi (Ganenkov & Maisak 2020: 100). Within West Caucasian, a gender category exists in Abkhaz and Abaza.
6. The Armenian use of the genitive case to express the agent in transitive constructions with the past participle is claimed by Deeters to have been influenced by Kartvelian, which shows ergative-absolutive alignment limited to past tense verbal clauses ('split ergativity'), cf. also Stempel 1983. However, the Armenian feature has also been ascribed to Middle Iranian influence (R. Meyer 2017: 109–60).

Armenian	p	pʰ	b	t	tʰ	d	k	kʰ	g	ts	tsʰ	dz	tʃ	tʃʰ	dʒ
Georgian	p’	pʰ	b	t’	tʰ	d	k’	kʰ	g	ts’	tsʰ	dz	tʃ’	tʃʰ	dʒ

Table 3.2: Stops and affricates in Classical Armenian and Old Georgian

These observations imply that, upon entering its historical region, Proto-Armenian was subjected to a phonological substrate from the local, Kartvelian languages. Within a contemporary framework of contact-induced language change based on cross-linguistic typology (e.g. Thomason & Kaufman 1988, Aikhenvald 2006, Donohue 2013), this type of change is consistent with a scenario in which speakers of Proto-Armenian were an intrusive but socially dominant minority. In the event that Armenian received a morphosyntactic overlay from Kartvelian, it would indicate a contact situation where Proto-Armenian speakers were socially subordinate to Kartvelian speakers, contradicting the evidence provided by phonology. However, such a morphosyntactic overlay cannot be decisively demonstrated. Naturally, the social status of the various language groups may have changed over time, allowing for the shifting exchange of phonology, morphology, syntax and lexicon. As stated before, the main scope of the present work is limited to lexical exchange. Loanwords moving between Kartvelian and Armenian are thus the main focus of this chapter.

3.3 Kartvelian loanwords in Armenian

Of the earliest Kartvelian loanwords that can be identified in Armenian, the large majority seem to have been adopted from the Zan branch (cf. J̌ahowkyan 1987: 595–7, Greppin 1999). This is also the conclusion that presents itself on the basis of the comprehensive, but rather uncritical overview offered by Cardona (1983: 48–63). Loanwords that can be positively identified as Zan are discussed in § 3.3.1. Apart from these loans, it is possible that some words entered Armenian from other Kartvelian sources, in particular Georgian, but the examples are fewer and mostly ambiguous with respect to whether the donor language was Georgian or Zan. These forms are discussed in § 3.3.2. Even more words have similar forms in Armenian and one or more Kartvelian languages, but

the trajectory of borrowing is uncertain or unknown, because the etymon in question does not have a deeper etymology on either side. Some of this material is presented in § 3.5, but it does not permit much discussion.

I do not offer a detailed treatment of every single previous proposal for Kartvelian loanwords in Armenian, but limit myself to presenting the most convincing material. Some proposals worth explicitly rejecting are briefly discussed under § 3.3.3, however. I have generally ignored words with a narrow, dialectal distribution in Armenian as well as words not attested in the oldest literature, since these may be very late loans.

That said, these later loanwords are generally relevant to the study of Armenian, because they hold a sometimes untapped potential to solve a number of etymological issues. Moreover, they can help shed light on the prehistoric social interaction between speakers of Armenian and Kartvelian languages. Hitherto, the Kartvelian stratum of loans has not been given much attention in mainstream literature. For example, Clackson (2017: 1123) states that "there are almost no loanwords from South Caucasian languages which are widespread and long established in the Armenian lexicon". With this in mind, it is clear why a discussion of these loans have a place in the present work.

3.3.1 Zan loanwords

The basis for distinguishing the source of these loanwords as Zan as opposed to Georgian are the phonological changes outlined in § 3.1. In some cases, a relevant Zan form is not directly attested. However, as we have seen, the split from Georgian happens comparatively late, meaning that the Zan form can be reconstructed with a high degree of confidence. In the following, note that the designation Zan is used as a cover term when forms in Megrelian and Laz are identical. Moreover, there are reconstructions that are either not reflected in both Megrelian and Laz or antedate one or more phonological changes shared by both these languages. Although in a strict sense, they thus belong to a "Pre-Proto-Zan" stage postdating the breakup of Proto-Georgian-Zan, they are conventionally labelled Proto-Zan (PZ) in the following.

III 1. **երինջ** *erinǰ* (*o*/*u*) 'heifer, young cow' ← Zan **erinǯ-*, cf. Meg. *orinǯ-*, *oriǯ-*, *orǯ-* 'cow, cattle' (Marr 1912, cf. Łapᶜancᶜyan 1952: 19). Armenian borrowed the word from a form that had undergone the regular Zan umlaut (§ 3.1.0.1). The umlaut was reversed in the attested Megrelian form, presumably on the basis of other (unattested) derivatives of the same root.[5] This root may be PK **(a)r-* 'to be' (Meg. *or-*, cf. Fähnrich 2007: 336), and the suffix can be identified with Meg. *-e/i(n)ǯ-* < PK **-ar-* (cf. Meg. *ma-r-enǯ-* 'being'). The semantic development is paralleled in Meg. *čxou* 'cow' from **ćxow-* 'to live' (cf. III 9). Arm. *erinǰ* is usually compared to Gk. ἔριφος 'kid', Li. (*j*)*éras* 'lamb', OIr. *heirp* 'deer' (EIEC 511, Olsen 1999: 185, EDA 144), but the semantics of these alleged cognates are quite disparate. The formation of the Armenian word with a feminine suffix **-nih₂* > **-nɨa* is unusual and makes it necessary to assume secondary transfer from the *a*-stems to the *o*-stems. Moreover, the assumption of a loan from Armenian into Zan (e.g. from a form **u/wrinǰ*; EDA 265) is phonetically problematic. In comparison, the assumption of a Zan loan in Armenian is unproblematic, and the Zan word can be explained as a native derivation.

Marr (1912) further compares Arm. *arǰaṙ* 'herd of cattle' < **ariǰ-aṙ* (?< **oriǰ-*). However, the Armenian suffix *-aṙ* is difficult to account for in this word, as it is generally rare and typically appears in adjectives only (see Greppin 1975: 50–1). Given the perfect semantic match with Meg. *oriǯ-*, however, I hesitate to reject the loan hypothesis entirely. At any rate, it is more convincing than the derivation from *arǰn* 'black' (EDA 144, following Scheftelowitz).

Arm. *oroǰ*, *aroǰ* 'lamb' has no established etymology.[6] I would propose that it is borrowed from a Zan form **oroǯ-*. This may likewise be a derivation of PK **(a)r-* 'to be', parallel to Meg. *orinǯ*. We can reconstruct GZ **ła-r-ar-i* > **o-r-oǯ-i*, with the same circumfix as in Ge. *sa-cxov-ar-* 'cattle', Zan **o-čxow-ar-* 'sheep' from the verbal root

[5] Alternatively, the ostensible substitution *o* → *e* in Armenian could be explained by assuming that the borrowing took place before the change of **o* > *a* in pretonic, open syllable. Subsequently **arinǰ* would have become *erinǰ* by generalization of the rule that the prothetic vowel has the quality *e-* when the root does not contain a labial vowel (EDA 716–7). This distribution is also seen in Iranian loanwords: compare *aroyr* 'brass' ← **raudə-* (MP *lwd*) vs. *erašt* 'dry' ← **rašt*V-* (NP *rašt* 'dry').

[6] Kölligan (2019: 181–2) treats it as an original compound **pro-gʷʰ₂ih₂*, cf. Gk. πρόβατον 'cattle'. For lack of other examples, it remains uncertain whether the laryngeal in the cluster **-gʷʰ₂i-* would actually result in aspiration to **-gʷʰɨ-* > Arm. *-ǰ-*, as must be assumed.

*ćxow- ‘live’ (see III 9). In the form *oroǯ-, the non-umlauted vowel of the second syllable shows that the loan must be older than *eriǹ*. Given this relatively old dating, we would expect the loan to predate the change of *o > a in the first (open) syllable. This change was presumably blocked in some dialects, because the second syllable contains another rounded vowel (cf. Kortlandt 1983b: 10).

III 2. ⰽⲟⲛⲕ-ⰽⲟⲣ *xočkor* (*a*) ‘piglet’ ← Zan *ɣoǯ-(ḳor-) ‘pig’ (Ačaṙyan 1909: 160, HAB II: 389). Cf. Zan *ɣeǯi*, Ge. *ɣori* ‘pig’ < PK *ɣor- with affrication of *-r- before a front vowel (NOM.SG *-i*) in Zan (Fähnrich 2007: 491–2). The borrowing must have antedated the shared Zan umlaut of *o > e (§ 3.1.0.1, Schmidt 1962: 48), unless this form was never umlauted because it was part of a compound.

The element *kor seems to be a separate lexeme meaning ‘young of an animal’, but this word is not independently attested, and its etymology has not been given much attention in the literature. Ačaṙyan (1909: 160, HAB II: 389) identifies *kor with the root of Arm. *koṙiwn* ‘whelp, cub’ without specifying their shared history much further. Arm. *koṙiwn* is often compared to Gk. βρέφος ‘foetus, infant, young of an animal’ and OCS *žrěbę* ‘foal’, under the assumption of roots *$\sqrt{g^{\text{w}}reb^{\text{h}}}$- and *$\sqrt{g^{\text{w}}erb^{\text{h}}}$- with *Schwebeablaut* (Pedersen 1911). If this root etymology is correct, Arm. *kor ‘young of an animal’ cannot reflect an old thematic stem *$g^{\text{w}}orb^{\text{h}}$-$eh_2$-, because there would be no way to explain the loss of *b^{h}. For Arm. *koṙiwn*, Pedersen (1911: 492) thus suggests an original *n*-stem *korb-n with loss of the interconsonantal *b and replacement of the suffix as in Arm. *ankiwn* ‘corner’ vs. Gk. ἀγκών ‘elbow’ (< *$\sqrt{h_2enk}$-, cf. Pedersen 1906a: 395). In Arm. *xočkor*, however, the motivation for a subsequent transfer from an *n*-stem to the *a*-stem would remain unclear. Olsen (1999: 491–2) reconstructs *$g^{\text{w}}rébh$-n̥t-, formally close to OCS *žrěbę*, and assumes the insertion of a prop-vowel in the initial syllable to explain the outcome *kor-* (instead of *Vrk-). In this scenario, a connection with *kor would be even harder to defend.

At the same time, *koṙiwn* has also been treated as a loanword. Already Schröder (1711: 45) compares Syr. *gūryā* ‘young of an animal’. Hiwnkᶜearpēyēntean (1894: 35) compares Gk. κόρος ‘(unborn) boy, shoot’, κόρη ‘girl’. Bugge (1893: 85) adduces Chechen *ḳorni* ‘young of an animal, nestling’ (cf. also Ingush *ḳorig*; Budukh *ḳora*, Lezg. *q̇erex* ‘young of a domestic animal’; Nikolayev & Starostin 1994: 731–2). The Nakh-Daghestanian forms provide the best formal and semantic

match. The assumption of a loanword is quite unlikely for Arm. *koṙwn*, however, because the suffix *-ṙwn* is synchronically associated with verbal nouns Olsen 1999: 492 and would be difficult to understand as a late addition. It is therefore likely that *koṙwn* should kept apart from **kor* after all. While the former may still be inherited, the latter form can be treated as a loanword. It was not necessarily borrowed into Armenian, however. Because the word is not found outside the compound *xočkor*, it is most economical to assume that it represents an unattested Zan form **ķor-*, borrowed from a Nakh-Daghestanian language.

It is unclear whether Arm. *kočan* 'porker', with its divergent initial *k-*, is ultimately related to the forms discussed above, as assumed by J̌ahowkyan (1973a: 94 fn. 8) (cf. EDA 161). This word looks more similar to Ge. *goč-* 'piglet', but the suffix *-an* suggests that the immediate donor for the Armenian word was Iranian. Marr (1909a: 158) and Łapᶜancᶜyan (1952: 22) compare Arm. *kinč*, *kinǰ* 'wild boar' with the Kartvelian forms, but this is both formally impossible and semantically questionable.

Armenian *xoz* I further propose that a reflex of PK **ɣor-* 'pig' was the source of Arm. *xoz* (*i/a*) 'pig'. To explain the final *-z* against *-č-* in *xoč-kor*, I assume that *xoz* was an earlier borrowing of a form **ɣorʲ-*, **ɣo*(*r*)*ž-* (vel sim.) → PA **xoz-* (if not **xoji-*, later > **xozi-*).[7] The fact that Arm. *xoz* is frequently attested as an *i*-stem allows us to assume that it was borrowed before the apocope, and that the Kartvelian NOM.SG marker *-i* was reinterpreted as a stem vowel. While the intermediate stage in the development of intervocalic **-r-* > *-ž-* in Zan is not directly attested, it is reasonable to assume that

[7] The assibilation of intervocalic **-j-* > *-z-* is regular, cf. Arm. *lizem* 'to lick' < **lējem* < **leiǵʰ-e/o-*, but the relative dating of this change is difficult. Ravnæs (1991: 154, 280) suggests that it is "fairly recent", claiming it did not affect affricates that became word-final after the apocope. However, the only example he provides has **-ǰ-* instead, i.e. *mēǰ* 'middle' (Lat. *medius*). Elsewhere (1991: 38 fn. 2), Ravnæs points out that the only example of the assibilation **-ǰ-* > *-ž-* is *iž* 'viper' (< **hₗeg*^{wh}*i-*, cf. Gk. ὄφις 'snake'), which happens to contradict the idea that the assibilation postdates the apocope, unless one assumes levelling from the oblique. In any case, the vowel *i* must have been taken from the oblique in this word, since the expected development is **hₗeg*^{wh}*i-* > **ēǰ/ž-*, OBL *iži-*. There are no examples of an etymologically clear, word-final *-j* that may confirm whether the affricate was preserved in this position. Assibilation before apocope is supported by *dēz* 'heap' (< **dʰoiǵʰo-*, cf. Gk. τοῖχος 'wall'), although we cannot exclude that it is borrowed from Iranian (Olsen 1999: 204).

the sound change must have passed through a stage that would have been close to Arm. *z* or *j*. In some western Georgian dialects, intervocalic **-r-* yields *-ž-*, cf. Guruli, Imeruli *ḳvežo* 'wooden hammer' (presumably ⇐ **ḳveži*), cf. Ge. *ḳver-* 'hammer' (Schmidt 1962: 119). This suggests that **r* was already allophonically palatalized in the position before front vowels at the Proto-Georgian-Zan stage. In that case, Arm. *xoz* may be one of the oldest loans from Kartvelian, as we have no other examples of loans that must be from Proto-Georgian-Zan.

III 3. կաղ *kał* 'lame, crippled' ← Zan **ḳal-*, cf. Ge. *ḳel-* 'to be lame' (Klimov 1998: 89). The donor form is unattested in Zan, but must be an adjective based on the verbal root found in Georgian and shows the regular Zan change of **e* > *a*.

III 4. կար *kar* (*o*) 'rope, string' ← Zan **ḳaro-*, cf. Ge. *ḳer-va* 'sewing, stitching' (Vogt 1938: 333, Cardona 1983: 50). Much like in the case of *kał* (3), this word is comparable to a GZ root **ḳer-* 'to sew, stitch' with the the Zan change of **e* > *a*. I assume that the donor form, like the Armenian form, was an *o*-stem, which additionally helps explain the lack of *r*-affrication in Zan (§ 3.1.0.3).

III 5. կճուճ *kčowč, kčič* (*o*) 'vessel' ← Meg. *čḳuž-, čḳud-* 'vessel, coffin', Ge. *čur-* 'vessel' (Łapᶜancᶜyan 1952: 37). Since Armenian has no other examples of Zan loanwords with an initial cluster of affricate and stop, it is impossible to say whether the metathesis is a regular adaptation.

III 6. ճանճ *čanč* (*i*) 'fly' ← PZ **čanž-* 'fly' (Meg. *čanž-*, Laz *mčaž-*) (Marr 1909b: 72, HAB III: 184–5, Cardona 1983: 49, Schmidt 1992: 288). The Georgian cognate is *mcer-* 'insect', reflecting PK **mćer-* (Klimov 1964: 249).[8]

III 7. ճիպռ *čipṙ* (*a*) 'bleariness, rheum' ← Zan **či(r)ṗur-*, cf. Ge. *cirṗl-*, Meg. *čirṗ-* 'rheum' (Vogt 1938: 332, Łapᶜancᶜyan 1952: 37–8, Schmidt 1992: 288). Either the Armenian or the Zan form underwent dissimilation from **čirṗ-ur-*. The expected outcome is Arm. NOM.SG **čpowṙ*, so the attested form must be a secondary creation on the basis of OBL *čpṙ°*.

[8] This stem is occasionally considered to be a derivation of **ćer-* 'to scratch, write' (Fähnrich 2007: 648–9), which seems doubtful for semantic reasons.

III 8. ***ջալուտ*** *ǰalot* (*i*) 'cudgel' is apparently a derivation of Laz *ǯal-* 'wood, tree', Ge. *ʒel-* < PK **ǯel-*. A comparable formation is found in MidA *lakot* 'puppy' ← Laz (Xopi) *laḳoṭ-* 'puppy', cf. Ge. *leḳv-* 'id.' (Vogt 1938: 332).

III 9. ***ոչխար*** *oč^{c}xar* (*a*) 'sheep' ← PZ **o-čxow-ar-* (Vogt 1938: 332–3, Gippert 2005: 154–5). The Zan reconstruction is the expected reflex of PK **ɬa-čxow-ar-*, cf. Ge. *sa-cxovar-* 'livestock' (Fähnrich 2007: 586)[9]. The stem without this prefix is seen in **čxow-ar-* 'live animal, sheep' (Ge. *cxovar-*, Meg. *šxur-* [with unexpected spirantization], Laz (*m*)*čxur-* 'sheep'; Klimov 1964: 231). This stem is derived from the verbal root **ćxow-* 'to live', cf. OGe. *cxovreba* 'live', cf. also Meg. *čxou*, *čxu*(*u*) 'cow' (Fähnrich 2007: 585–6). Based on the chronology of Schmidt (1962: 150), the donor form belongs to a (Pre-)Proto-Zan stage, as it shows the change of **a* to *o* and the loss of initial **ɬ-*, but not the assimilation and syncope of the internal vowels, which is a common Zan change.

III 10. ***փարախ*** *p^{c}arax* (*i*) 'sheepfold, shed' ← Zan **porax-*, cf. Ge. *parex-* 'winter sheepfold, garage', *da-parex-al-* 'former sheep pen' (HAB IV: 485). The Zan form is unattested, but on account of the change **e* > *a* in the second syllable, it can be assumed as the source of the Armenian form.[10] In the relative chronology of Zan sound changes, **a* > *o* must have preceded **e* > *a*, since otherwise, GZ **a* and **e* would have merged. Thus, the donor form was not ***parax-*, but **porax-*. This means that the Armenian form was borrowed early enough to observe the change of **o* > *a* in the pretonic, open syllable.

III 11. ***փոցխ*** *p^{c}oc^{c}x* (*p^{c}oc^{c}ɬ*) 'rake' ← Ge. *pocx-* 'rake, harrow; (dial.) branch', *pucx-*, Laz *bucx-* 'rake', Meg. *pucxua* 'to rake, harrow' (HAB IV: 521). Taking into account Ge. *parcx-* 'harrow' < GZ **parcx-*, the form *pocx-* itself must be an original Zanism in Georgian, since this would explain the change of **a* > *o* and the loss of preconsonantal **r*. This form developed further to *pucx-* in Zan (the inital *b-* of the Laz form is irregular). Both the variants with *o* and *a* were loaned into Oss. *poxci* 'harrow' and *paxsa* 'rake' respectively (Abaev II: 238, 243).

[9] For the prefix, compare Ge. *sa-x(e)l-* 'house', Meg. *o-xor-* 'house', based on the verbal root **xol-* 'to be amidst, near' (Fähnrich 2007: 689–90). There is no good reason to consider the initial Arm. *o-* to be an assimilated prothetic vowel as Cardona (1983: 51) does.

[10] Meg. *parex-* 'wasp's nest', if related, must be a loan from Georgian.

Although the Zan form is found in Georgian, it is most economic to assume that the Armenian form was borrowed directly from Zan, but this cannot be decisively demonstrated.

3.3.2 Zan or Georgian loanwords

This section contains unproblematic loanwords from Kartvelian that are not distinctly Zan, but for which Georgian can be assumed as the donor language, or for which it is not possible to distinguish between a Georgian or Zan donor. These loans can be established as Kartvelian loans into Armenian on account of cognate forms in other Kartvelian languages, or in some cases, because they have a phonological shape which makes it unlikely that they are inherited in Armenian.

III 12. բոզ *boz* (*i*/*a*) 'whore' ← Ge. *boz-* 'whore', *bozo-b-* 'whore, adulterate', Laz *bozo*, *bozomota* 'girl, virgin, daughter' (Ačaṙyan 1940: 212, HAB I: 459). Due to the semantic match between the Armenian and Georgian forms, it seems most likely that Armenian borrowed the word from Georgian, where the semantic shift may have taken place. It is theoretically possible, however, that the pejorative meaning of the Georgian word was secondarily influenced by Armenian. Ultimately, the (Georgian-)Zan forms were probably borrowed from West Caucasian, cf. Adg., Kab. *bzə*, Ub. *bza*, Ab. *a-ps* 'female' (cf. Nikolayev & Starostin 1994: 374–5).

III 13. բուրդ *bowrd* (*o*) 'wool', *brdem* 'cut up, crumble' ← Ge. *burdo* 'chaff which is not threshed out, tangled mass'. The Armenian word is usually considered to be inherited from a root *$\sqrt{b^herd^h}$-, in which case the loan would have moved in the opposite direction. There are, however, severe problems with this etymology (see IV 21 for further discussion). The Georgian word appears to be cognate with Sv. *burdäl*, *birdw* 'chaff' < PK **burdo-* (Fähnrich 2007: 83). It is evident that this noun derives from the verbal root **burd-* 'tangle up', cf. Ge. *burdva*, Sv. *libūrde*, Meg. *burdua* 'churn'. The usual ClArm. word for 'wool' is *asr*, and we can assume that the verbal meaning of *brdem* 'cut up, crumble' is more original, as it is difficult to derive from 'wool'. Thus the latter meaning probably developed from 'lump, mass of wool', which harmonizes well with the Georgian meaning 'tangled mass'. The Georgian word is not attested in older literary

sources, but this might simply be a result of its narrow semantic range.[11]

III 14. ***գի*** *gi* (*o*) 'juniper' ← **ɣwiw-*, cf. OGe. *ɣw(v)a-*, Sv. *ɣwiw* 'juniper' (Simon 2022). The Armenian word is usually derived from **ɻiHt-*, cf. Gk. ἴτεα, OHG *wīda* 'willow'. The Kartvelian forms are therefore considered loans from Proto-Armenian (EDA 212, HAB I: 554). However, a semantic shift from 'willow' to the highly dissimilar 'juniper' is not likely. More importantly, the Svan form points to an internal glide *-w-*, which is difficult to explain from an Armenian starting point, as it can hardly be a substitution for intervocalic **-t-*. Therefore, it is more prudent to assume borrowing in the opposite direction (see also Simon forthcoming). The substitution of Ktv. **ɣw-* → PA **ɣʷ-* > *g-* is unproblematic if the phoneme **ɣʷ* was in existence at the first chronological stage of Armenian-Kartvelian language contact. This is corroborated by **ɣwin*(*o*)- (III 55) and more indirectly by *cov* 'sea' (III 21).

III 15. ***հորի*** *hoṙ-i* (GEN.SG) 'the second month of the ancient Armenian calendar' ← Ge. *or-* 'two' < PK **i̯or-*, cf. Meg. *žir-*, *žər-*, Laz *žur-*, *ǯur-*, Sv. *jor-* 'two' (HAB III: 114). Initial *h-* in Armenian is sometimes hypercorrect (cf. *hoktember* 'October'), but in this case, it may also indicate that the word was borrowed from a Pre-Zan source, at a time when the development of initial PK **i̯-* > Zan *ž-* was at a stage **ɦ* vel sim.

III 16. ***լորձն*** *lorjn* (*-in*, *-amb*, *-ownkᶜ*, *-ancᶜ*); *lorj* (*o*) 'saliva, slobber' ← Ge. *lorço*, *lorç-*, *lorçḳo* 'slime, sticky sap', *lorçḳ-* 'foam (at mouth), slobber' (Klimov 1964: 189). Since the formal and semantic variation among the Georgian forms is greater, I assume the word was borrowed from Georgian or Zan. This means that the Arm. *n*-stem, despite being attested earlier (1.Sam. 21.13 has ACC.PL *lorjowns*), must be secondary (on this phenomenon, cf. Weitenberg 1985).

[11] The root PK **burdɣ-* (cf. Ge. *burdya* 'down, plumage', *brdɣvna* Sv. *libindɣlawi* 'pluck poultry') is somewhat semantically close to **burd-*, but it is unknown whether an old derivational relationship exists. If so, it would further confirm the native status of this form in Kartvelian. This root is impossible to regard as an Armenian loan. J̌ahowkyan (1973a: 92 fn. 3) mentions that Ačaṙyan had adduced them as loanwords from Armenian in the first edition of HAB (1926), but they do not appear in the second edition (1971).

III 17. ***խիւս*** *xiws* (*o*) ‘porridge, gruel’ ← **xews-*, cf. Sv. *xews* ‘breakfast’. The Armenian word does not have an existing etymology, but initial *x-* suggests that it is non-inherited. The Svan word does not have comparanda within Kartvelian, but nothing hinders the assumption that it is inherited. The Armenian *iw* may be explained by levelling from the oblique cases if the word was adopted to follow the pattern **xews*, OBL *xiws-* (cf. the discussion s.v. *ewł*, IV 31).

III 18. ***խոփ*** *xop^{c}* (*o*) ‘coulter, ploughshare’ ← Ge. *xop-* ‘oar, (Mokhevi) depression in ground’, *xoṗ-* ‘rudder, (Rachan) wooden scraper’, Meg. *xoṗ-* ‘rudder, shovel, water barrier at the groove of a mill’, Laz *xoṗe* ‘shovel’ (HAB II: 423). The final *-p^{c}* of the Armenian form shows that it is borrowed from Georgian. The alternation of *p* and *ṗ* within Kartvelian suggests that this etymon is a borrowing there as well. The donor is probably a Nakh-Daghestanian language, cf. Akhvakh *q̇:obe*, Chg. *ɣ^{w}ab* ‘ploughshare’.

III 19. *cep^{c}* (*o*) ‘plaster, cement’ ← Ge. *ცebo* ‘glue, resin’, *ცebavs* ‘to glue’ < **ć̌eb-*, cf. Meg. *č̣abua* ‘glue, stomp’ (HAB II: 453, Vogt 1938: 48, Cardona 1983: 48). It is remarkable that the final *-o* matches the *o*-stem declension of the Armenian word, suggesting that the borrowing took place before the loss of final syllables in Armenian. Usually, this correspondence is taken as indication of a borrowing in the opposite direction (see § 3.4), but the Armenian word has no etymology, and the Megrelian cognate would require a loan from Armenian to have taken place at the Proto-Georgian-Zan level. Moreover, the devoicing of final *-b* > *-p^{c}* is best understood as a secondary Armenian sound change.

III 20. ***ծուխ*** *cowx* (*o*) ‘smoke’ ← *ცux-* *‘smoke, ?soot’, cf. Ge. *ცuxva* ‘sorrow, sadness’, *ცuxra* ‘evening’, *mცuxr-* ‘dusk, nightfall’ (HAB II: 470, Vogt 1938). The comparison builds on the assumption that the Georgian meanings ‘sorrow’ and ‘evening’ both developed from **‘smoke’ with potential secondary meanings ‘soot, darkness’ vel sim. Ačaŕyan (HAB II: 470) adduces the polysemy of NP *dūd* ‘smoke; anguish, sadness’ as a parallel (cf. also Gk. θῡμός ‘soul, spirit’ < **d^{h}(o)uHmo-* ‘smoke’). Although this is a circumstantial argument, the proposal can be accepted on account of the perfect formal match and the complete lack of alternative etymologies for the Armenian word.

III 21. ծով *cov* (*u*) 'sea' ← GZ (?) **ʒoɣw-*, cf. OGe., Meg. *zɣva*, Laz *zɣua*, *zuɣa*, (*m*)*zoɣa*, Svan *zuɣva*, *ʒuɣva* 'sea' (Gippert 1994: 121–2). The reconstruction of the Kartvelian word is a matter of disagreement. Klimov (1964: 89) reconstructs PK **zɣwa-*, but an epenthesis of **o*/*u* in the Zan and Svan forms would be difficult to explain, and it is thus simpler to assume that this vowel was present in the proto-form. Schmidt (1962: 111–2) does not give an exact reconstruction, but crucially states that the initial *ʒ-* of the Svan form must be primary. Gippert (1994: 121–2) suggests PK **ʒaɣwa-*. This reconstruction requires, however, that the Svan form *ʒuɣva* is borrowed from Zan **ʒuɣwa*, since the development **a* > *u* would otherwise be unexpected. Fähnrich (2007: 177–8) thus reconstructs **zoɣw-*. The main obstruction is that in any case, several of the individual forms must be intra-Kartvelian borrowings. This is, at any rate, the case for Laz *zɣua* and Meg. *zɣva*, which must be loans from Georgian.

Despite the uncertainty about these details, I do not think that the similarity of the Kartvelian forms and Arm. *cov* 'sea' can be coincidental. The Armenian word is only forcibly given an Indo-European etymology, as recently discussed by Kölligan (2019: 152–63). He concludes by proposing a PIE compound **dḭeu̯-o-bʰh₂u-* 'sky-coloured', which would represent a transfered epithet and a trace of Indo-European poetic language. The problem is that, while parallels for such a formation and the generalization as a noun can be adduced, the exact formation is otherwise unattested. The assumption of a loan from Ur. *ṣue* is less preferable because this word mostly refers to an artificial lake (see II 39).

If the Armenian word was borrowed from Kartvelian, it requires the assumption that the borrowing preceded the change of final *-ɣʷ* > *-w*/*-v*. This is *a priori* unproblematic. The phonemic split of PIE **u̯* into (-)*g-* and *-w*/*-v* is best understood as the result of a late phonemic split of **ɣʷ*, which was simplified to *-v* in word-final position after the loss of final syllables (cf. Kortlandt 1980). The existence of **ɣʷ* at the time of early Armenian-Kartvelian contact is corroborated by PK (?) **ɣwin*(*o*)- on one side (III 55) and by the loanword *gi* 'juniper' < **ɣʷi-a-* (III 14) on the other. If we assume that Schmidt and Gippert are correct in reconstructing the Kartvelian word with an initial affricate, and that Fähnrich is correct in posing **o*-vocalism, we can assume a borrowing **ʒoɣwV* → PA **dᶻoɣʷ-V-*. This means that the borrowing must have taken place before the sound shift, as opposed to all other loans from Kartvelian languages, where

affricates retain their manner of articulation. Since loanwords from Hurro-Urartian also postdated the sound shift (see § 2.4), this would make *cov* the oldest identifiable loanword from a known language into Armenian.

III 22. *սահմի sahm-i* (GEN.SG) 'the third month of the ancient Armenian calendar' ← Ge. *sam-* 'three' < PK **sam-*, cf. Zan *sum-*, Sv. *sem-* 'three' (HAB IV: 163, Klimov 1964: 161). The Armenian spelling with *-h-* is not easily explained. According to Lagarde (1866: 179), the Greek translation of Agatᶜangełos writes the name as Σαομὶ. Perhaps the spellings with ⟨αο⟩ and ⟨ah⟩ can be interpreted in the sense that the learned pronunciation was approximately /sɔm-/. That would indicate that the word was borrowed from a Pre-Zan form while at an intermediate stage in the development from GZ **sam-* > PZ **som-* (later > *sum-*). Notably, this assumption is consistent with the possiblity that the month name *hoṙi* was also borrowed from Pre-Zan (see III 15).

III 23. *փիճի pᶜičči* 'pine' (GEN.SG *-woy*) ← OGe. *piçu-*, *piçv-* 'cedar, pine', Laz *pinço* 'pine' (HAB II: 504, Vogt 1938: 35). In Armenian, the suffix *-i*, commonly applied to tree names, was independently added to *pᶜičˇ**, itself borrowed from the Kartvelian *u*-stem.

We should not ignore the similarity of these forms with the "Mediterranean" forms reflecting **pit*(*s*)- (Gk. πίτυς 'pine, fur, spruce', Lat. *pīnus*, Alb. *pishë* 'pine'; cf. de Vaan 2008: 467 comparing also Lat. *pix* 'pitch, resin').[12] However, if the Kartvelian forms were borrowed from Armenian, which in turn adopted the word from an unknown language, we would be forced to assume a very divergent quasi-IE form **pʰid-i̯-*. The assumption of a Kartvelian loanword in Armenian is unproblematic, on the other hand, but it is likely that the Kartvelian forms are ultimately borrowings from a source close to the Greek, Latin, and Albanian forms (Furnée 1979: 28).

III 24. *քթթի kᶜtᶜitᶜ*, *kᶜtᶜtᶜelikᶜ* 'blinking of the eye', *kᶜtᶜtᶜem* 'blink, wink' ← Ge. *kututo* 'eyelid' (Vogt 1938: 332, Cardona 1983: 50). Ačaṙyan (HAB IV: 577) assumes the opposite direction of borrowing, but the Georgian meaning appears to be more primary. The vowel of the

[12] The apparent alternation **t* ∞ **k* may perhaps be interpreted as the substitution of a non-IE phoneme /ʧ/, which would, in turn, be more faithfully reflected in the Georgian form.

Armenian simplex *kᶜtᶜitᶜ* was falsely restored on the basis of the verb or verbal abstract (cf. e.g. *owmp* 'drink' ⇐ *əmpem* 'to drink' < **pi-m-be-*), and the meaning was transferred from the abstract.

3.3.3 Rejected proposals

This section briefly discusses previous proposals for Kartvelian loanwords in Armenian that are untenable, either for formal or semantic reasons.

III 25. ***ականջ*** *akanǰ* (*i*) 'ear' ← Zan *q̇uǯ-*, cf. Meg. *ʃuǯ-* 'ear' (Łapᶜancᶜyan 1952: 15–6, Łapᶜancᶜyan 1961: 93. The equation is formally impossible. Although the details are unclear, the Armenian word must be related to Arm. *ownkn* 'ear' (EDA 21–2).

III 26. ***աղբ*** *ałb* (*o*) 'dung, manure' ← Laz *lebi* 'dirt' (Ačaŕyan 1940: 212, HAB I: 124). Even if the word was borrowed with initial **ł-*, which would trigger vowel prothesis, the loss of *-e-* is unexplained. The Armenian word reflects **slbʰo-*, cf. Hit. *šalpa-* 'excrement' (Schindler 1978, Olsen 1999: 37, EDA 32). Łarabał *lep* 'sediment' may be borrowed from the Laz word or a Megrelian cognate, but it must be a more recent loan.

III 27. ***աջ*** *aǰ* (*o*) 'right' ← Ge. *marǯvena*, Meg. *marʒgvani*, Sv. *lärsgwan* 'right (hand)' (Cardona 1983: 48, Holst 2009: 104). The root must be PK **rǯw-* (Fähnrich 2007: 356) or better, **rʒgw-* (Schmidt 1962: 122). This does not match the Armenian form, which reflects PIE **seh₂dʰi̯o-*, cf. Skt. *sādhú-* 'straight' (EDA 100).

III 28. ***գայլ*** *gayl* (*o*) 'wolf' ← Ge. *mgel-*, Meg. (*m*)*ger-*, Laz *mge*(*r*)*-*, *gver-*, *mǯver-* 'wolf' (Cardona 1983: 49). The substitution *e* → *ay* is unexplained. The Kartvelian word can only be reconstructed to GZ *(*m*)*gel-*. The Armenian word may be derived from a (tabooistic) formation **u̯ailo-* 'howler', cf. MIr. *fáel* 'wolf' (see EDA 197 with references).[13] It is chronologically impossible that the Kartvelian forms were borrowed from dialectal Arm. *gel* with monophthongization (EDA 197), because the word is found already in the Old Georgian Bible. It is conceivable that a diphthong *ay*, which is not found in native Kartvelian words, would have been replaced by *e* at an earlier

[13]The direct derivation from PIE **u̯lkʷo-* (cf. Holst 2008) is formally problematic and requires several *ad hoc* assumptions.

point in time. Note the same replacement in loanwords from Georgian to Megrelian, e.g. Meg. *mesi* 'May' ← Ge. *maisi* (Schmidt 1962: 42). I would consider the assumption of a loan into Georgian uncertain. A loan into Armenian can be excluded.

III 29. *խրամ xram* (*o*/*i*) 'trench, ditch' ← Laz *ɣorma* 'hole, opening' (J̌ahowkyan 1973a: 94). The sound substitution *ɣ* → *x* is regular, but *or* → *ra* is unexplained.

III 30. *ձախ jax* 'left, sinister' ← Ge. *marcx-*, Meg. *ḳvarčx-* 'left' (Klimov 1964: 127, Cardona 1983: 50, Holst 2009: 104). Since *ma-* probably represents the same prefix as in *ma-rǰv-ena* 'right', the root must be PK **rćx-*.

III 31. ***čat* "bread" ← Ge. (*m*)*ç̌ad-* 'bread (of maize or millet)' (Klimov 1964: 143, Cardona 1983: 49). Klimov gives the Armenian form as "*ç̌at-*" (recte *čat*). This word does not exist (NBHL, HAB, HLBB, and Malxaseanc[c] 1944 *vacat*).

III 32. *ճճի čči* (*ea*/*o*) 'insect, worm, vermin' ← Ge. *ç̌ia* 'worm, maggot' (Vogt 1938: 332, Cardona 1983: 49). The Armenian form must be a derivation of a (reduplicated?) stem *čič** or **čuč**, cf. the variant *čiči*. A form *či* is only found in dictionaries (cf. HAB III: 206).

III 33. *միծ mic* (ABL.SG *micē*) 'mud, dirt' ← Ge. *miça* 'earth, ground' (Vogt 1938: 332, Cardona 1983: 51). The semantic agreement is not exact. The Armenian word may be a perfect cognate of OE *smitta* 'smear, spot' < **smid-i̯eh₂-*, cf. the root **√smeid-* in Go. *gasmeitan* 'daub'; OCS *smědъ* 'dark, brown' (IEW 966–7). The Georgian word does not have Kartvelian cognates, so perhaps it was borrowed from Armenian, but the semantic disagreement remains a problem.

III 34. *նեխ nex* (*o*) 'festering; rottenness' ← Ge. *nexv-* 'dung, manure' (Vogt 1938: 331). The semantic agreement is not exact.

III 35. *շլան šlan* 'ashes' ← Ge. *šlam-* 'silt, ooze' (HAB III: 525, Vogt 1938: 333, Cardona 1983: 53). The semantics do not match and the substitution final *-m* → *-n* is unexplained. The Armenian word is a hapax in Chrysostom. The Georgian form is not found in Old or Middle Georgian sources and most likely borrowed from Ru. *šlam* 'sludge, sediment' ← G *Schlamm* 'mud, ooze'.

III 36. **որոգայթ** *orogayt^{c}* (*i*) 'trap, snare' ← Meg. *ragv-* 'bird trap', Laz *rag-* 'trap' (Łap^{c}anc^{c}yan 1952: 24–5). The equation is formally impossible. Even if initial *o-* is analyzed as a prothetic vowel, and *-ayt^{c}* is an unidentified suffix, the root vowel differs from the Kartvelian forms (Zan **a* points to PK **e* or **a*). The Armenian word is more likely to represent an old formation with the preverb **pro-* and the root seen in *gayt^{c}em* 'stumble, trip' (Klingenschmitt 1982: 105 fn. 27, cf. EDA 386).

III 37. **տարփ** *tarp^{c}* (*o*) 'love, desire', *tṙip^{c}k^{c}*, *trip^{c}k^{c}* 'desire' ← Ge. *ṭrpoba* 'love, desire', *ṭurpa* 'beautiful (woman), beloved' (Vogt 1938: 336–7, Cardona 1983: 53). Due to the non-matching vowels, the Georgian and Armenian forms are probably independent borrowings from West Middle Iranian, cf. Av. *ϑrąf(ə)δa-* 'satisfied' < PIE **√terp-* 'satisfy, satiate', cf. Skt. *tr̥mpáti* 'please, satisfy oneself', Gk. τέρπομαι 'enjoy', Li. *tařpti* 'thrive' (LIV^{2} 636).

III 38. **ցիր** Arm. *c^{c}ir* 'scattered, dispersed', *c^{c}rowem* 'disperse' ← Ge. *cer-** 'sift', cf. OGe. *aɣ-cr-a* 'sift', *sa-c(e)ri* 'sieve' (Vogt 1938: 332, Cardona 1983: 48). A better phonetic match is Meg. *cirua* 'sieve'. The semantic agreement is poor, however.

3.3.4 Results

Accepted proposals for loanwords from either Zan or Georgian, along with three new proposals (*xiws*, *xoz*, and *bowrd*) are given in Table 3.3.

3.3.5 Analysis

At least thirteen borrowings from Zan into preliterary Armenian can be identified (§ 3.3.1). It may be assumed that the earliest of these loanwords entered the Armenian lexicon before the dissolution of the Zan unity, when not all Zan sound changes had taken place. These unobserved sound changes include umlaut and internal syncope (*oč^{c}xar*, III 9). The assibilation of GZ intervocalic **r* appears to be underway in *xoz* (III 2), but in other cases (*p^{c}arax*, III 10), this sound change is not yet observed. In *xočkor* (III 2), on the other hand, it is completed. These observations indicate that Armenian contact with the Zan stratum was relatively prolonged, starting around the time of Georgian-Zan dialectal unity, and stretching up until the

Armenian	Kartvelian	Lemma
gi 'juniper'	Ge./GZ **ɣwiw-* 'id.'	III 14
xiws 'porridge, gruel'	GZ (?) **xews-* 'id. (?)'	III 17
cov 'sea'	GZ **ʒoɣw-* 'id.'	III 21
hoŕi 'second month'	Zan (?) **(i̯)or-* 'two'	III 15
sahmi 'third month'	Zan (?) **sa/om-* 'three'	III 22
erinǰ 'heifer'	Zan **erinǰ-* 'cow, cattle'	III 1
xočkor 'piglet'	Zan **ɣoǯ-(ķor-)* 'id.'	III 2
xoz 'pig'	Zan **ɣorʲ-* 'id.'	III 2, p. 53 ff.
kał 'lame, crippled'	Zan **ķal-* 'id.'	III 3
kar 'rope, string'	Zan **ķaro-* 'id.'	III 4
čipŕ 'rheum'	Zan **ċi(r)ṗur-* 'id.'	III 7
očᶜxar 'sheep'	Zan **o-ċxow-ar-* 'a live animal'	III 9
pᶜarax 'sheepfold'	Zan **porax-* 'id.'	III 10
pᶜocᶜx 'rake'	Zan **pocx-* 'id.'	III 11
kčowč, kćič 'vessel'	Meg. *ċķuǯ-* 'id.'	III 5
čanč 'fly'	Meg. *ċanǯ-* 'id.'	III 6
ǰalot 'cudgel'	Laz *jal-* 'wood'	III 8
boz 'whore'	Ge. *boz-* 'id.'	III 12
bowrd 'wool, *lump'	Ge. *burdo* 'tangled mass'	III 13
lorjn 'saliva'	Ge. *lorço* 'slime'	III 16
xopᶜ 'coulter, ploughshare'	Ge. *xop-* 'oar, depression'	III 18
cepᶜ 'plaster, cement'	Ge. *ċebo* 'glue, resin'	III 19
cowx 'smoke'	Ge. *ċux-* '*smoke'	III 20
pᶜičᶜi 'pine'	OGe. *piču-* 'id.'	III 23
kᶜtᶜitᶜ 'blinking of the eye'	Ge. *kututo* 'eyelid'	III 24

Table 3.3: Kartvelian loanwords in Armenian

historical era, with the adoption of late and dialectal words such as *lakot* 'puppy' (III 8). There are at least twelve additional loanwords, for most of which it cannot be determined whether the donor language was Georgian or Zan (§ 3.3.2).

As already stated, the Zan-Armenian contacts must have antedated the dissolution of Proto-Zan, defined as the time when the last common innovation took place between Megrelian and Laz. The approximate dating of this event is difficult, not least since the Zan languages have historically been treated as a single language and probably enjoyed some mutual intellegibility until recently.[14] Never-

[14] One of the decisive factors in the loss of Laz-Megrelian mutual intellegibility seems to be the massive adoption of Turkish loanwords in Laz.

theless, the Zan dialects may have innovated jointly at least up until the seventh century CE, i.e. beyond the time when Armenian could have borrowed words that are attested in fifth century literature. It is likely that Zan-Armenian contacts began several centuries before, and we can in fact point to a potential *terminus post quem*. Since all identifiable Zan loanwords in Armenian show the change of GZ **a* > *o*, the first contact between Armenian and Zan proper must have postdated the colonization of the Western Pontic coast by Milesian Greeks around the sixth century BCE — that is, if the city and river name Φᾶσις reflects **Pati*, matching the modern city name *Poti*.

The sound substitutions observed in the most of the material show that very few Armenian sound changes took place between the borrowing of these words and the beginning of the literary tradition. This is also consistent with the assumption that Armenian-Zan contact is relatively recent. A notable exception is the change **o* > *a* in pretonic, open syllables, which may be observed most clearly in *pʿarax* (III 10). We thus find additional support for the assumption that this was one of the final sound changes that preceded the onset of Armenian literacy, affecting even some Greek loanwords (cf. Clackson 2020). Moreover, the fact that the Armenian reflections of Zan words are integrated into various declension classes (*a*-, *o*-, and *i*-stems) indicates that the loss of final syllables must have been completed in Armenian, since otherwise, we would expect most (if not all) loans to be reflected as *i*-stems. On the other hand, the deletion of the NOM.SG ending *-i* is regular in borrowings from Kartvelian, and it is admittedly conceivable that the change of declension class was secondary. Given, however, that almost no other sound changes can be observed, it is the most likely assumption that the apocope had taken place in Armenian.

Two remarkable exceptions to this chronology are Arm. *gi* 'juniper' ← **ɣwiw-* (III 14) and especially Arm. *cov* 'sea' ← **ʒoɣw-* (III 21). The former word would have been borrowed before the change of **ɣʷ-* > *g-*, while the latter word would have been borrowed before the shift of *mediae* to *tenues*. If the etymology of *cov* proposed here is correct, it demonstrates that Kartvelian loanwords began to enter Armenian before Hurro-Urartian loanwords, which do not undergo the Armenian sound shift (§ 2.4). Additional support for such an early onset of Armenian-Kartvelian contact is provided by the Armenian loanwords in Kartvelian (§ 3.4.5).

3.3.5.1 Semantics

The Kartvelian loanwords accepted in §§ 3.3.1–3.3.2 can be divided into the following semantic categories.

- The natural world/The human body (8–9): *gi* 'juniper', *kał* 'crippled', *čipṙ* 'rheum', *boz* 'whore', *lorjn* 'saliva', *cowx* 'smoke', *cov* 'sea' (?), *pʿičči* 'pine', *kʿtʿitʿ* 'blinking'.
- Animal husbandry (7): *erinǰ* 'heifer', *oroǰ* 'lamb', *xočkor* 'piglet', *xoz* 'pig', *očʿxar* 'sheep', *pʿarax* 'sheepfold', *bowrd* 'wool'.
- Tools/Technical terms (6): *xopʿ* 'coulter, ploughshare', *pʿocʿx* 'rake' (agriculture); *cepʿ* 'plaster', *kar* 'rope, string', *kčowč, kčič* 'vessel', *ǰalot* 'cudgel'.
- Other (2): *xiws* 'porridge', *čanč* 'fly'.

It is especially remarkable that many of these loans are of a relatively non-specialized character and appear to belong to a low register. In particular, they refer to objects of daily life, the human body, and domestic animals. This suggests an adstratic contact situation and perhaps even prolonged bilingualism, which in this case must have been early or widespread enough to facilitate the spread of these loanwords to the entire Armenian language area. Furthermore, it is important that there are a few loanwords relating to agriculture: *xopʿ* 'ploughshare' (III 18), *pʿocʿx* 'rake' (III 11), and perhaps *xiws* (III 17) 'porridge', which indicates that the technology of agriculture among Armenian speakers was advanced through contact with Kartvelian speakers. Additionally, there is a large group of words related to animal husbandry. Although the PIE word for 'sheep' may be preserved compositionally in Arm. *hoviw* 'shepherd' (< $h_2o\underline{u}i$-peh_2-), the simplex **hov* was presumably replaced by *očʿxar* because the shepherding traditions of Zan/Kartvelian speakers was perceived to be more advanced or prestigious. The inherited word for 'pig', PIE **suH-* (Gk. ὗς, Alb. *thi*, Lat. *sūs*), was lost entirely in Armenian; if not at an earlier stage, then as a result of contact with Zan.

3.4 Archaic Armenian loanwords in Kartvelian

Some of the most interesting evidence for early contact between Armenian and the Kartvelian languages is provided by the loan-

words in Kartvelian that preserve archaic forms of Armenian words, since altered by sound change. The relatively high degree of phonological conservativeness shown by the Kartvelian languages (especially Georgian and Zan) is a significant advantage for identifying these forms. One may compare the situation to that of the early Germanic loans in Finnic (J̌ahowkyan 1973a: 91). A groundbreaking study on this topic is that of Vogt (1938), while later contributions have been made by J̌ahowkyan, Gippert, and others.

The primary criterion for identifying loanwords in this stratum is that they have been inherited from an older Proto-Armenian stage, i.e. either from Proto-Indo-European or from a sufficiently early stratum of loanwords in Armenian. In some cases, it is possible to assume that a given form existed in Proto-Armenian, but was lost before the literary attestation. To be sure, this is to be expected since the majority of words inherited from Proto-Indo-European do not have attested Armenian reflexes. These forms can, however, be projected on the basis of existing reconstructions. I argue that such a form is reflected in Ge. *ç̣ero* 'crane' (III 54). Other proposals of this kind are harder to substantiate and can be found among rejected proposals (§ 3.4.4).

A second criterion applied to the Kartvelian words included here is that they preserve at least one phoneme that was changed or lost before their first attestation in Armenian. This consequently excludes a large number of Armenian loans in Georgian, stemming from the literary epoch, which are direct reflections of the attested Armenian forms. A wealth of such loanwords can be found throughout Ačaŕyan's etymological dictionary (HAB). A useful overview is also provided by Słuszkiewicz (1974), who, in turn, bases himself on the Georgian-German dictionary of Meckelein. Finally, J̌ahowkyan (1987: 590–6) discusses both literary and preliterary loans to (and from) Kartvelian.

In the following, Armenian loanwords in Kartvelian languages are grouped according to the highest Kartvelian clade for which they can be solidly reconstructed. Thus, distinction is made between those words attested in Georgian alone (§ 3.4.1), those that can be reconstructed for Georgian-Zan (GZ, § 3.4.2), and those that can be reconstructed for Proto-Kartvelian (PK, § 3.4.3).[15] In some sense, this

[15]It may be expected that some of the archaic Armenian loanwords that entered one of the higher clades are attested only in Zan or Svan. Such words have not been

grouping is a matter of formality and the lack of a better criterion, because their confinement to one clade does not necessarily mean that they did not exist at a higher clade. It should of course be noted that we would expect a significant overweight of archaic forms to be found in (Old) Georgian, being attested more than a millenium before the other Kartvelian languages, where cognate forms may easily have been lost in the meantime. Furthermore, the secure reconstruction for Proto-Kartvelian hinges on an attestation in Svan, a language with no literary tradition. This means that in many cases, we may be faced with an exclusively Georgian-Zan reconstruction that may well descend from Proto-Kartvelian, but lacks the evidence to prove it. On the other hand, the conservativeness of many Kartvelian forms leads to cases where cognate forms in all languages are virtually identical, making it impossible to exclude that they are not the result of later borrowing events (cf. e.g. Ge. *ɣvino-*, III 55).

3.4.1 Georgian

III 39. OGe. ერდო *erdo-* 'flat roof' ← PA **erdo-* > Arm. *erd* (*o*) 'louver, skylight; house' (J̌ahowkyan 1973a: 92, 1987: 590, Schmidt 1992: 300). The Armenian word is usually considered to be without etymology (HAB II: 44, Olsen 1999: 951, EDA *vacat*). However, it is possible to compare it with OCS *odrъ* 'bed', Cz. *odr* 'pillar, frame, summerhouse'; OE *eodor* 'fence', and ON *jaðarr* 'edge' < **h₁ed^{h}-ro-* (J̌ahowkyan 1973a: 92). The original meaning may have been 'frame', which would make the meaning 'louver' the most primary of the Armenian meanings. This etymology provides us with an example of the metathesis **-d^{h}r-* > *-rd-*, which, by coincidence, is otherwise unattested.[16]

III 40. Ge. თაბრო *taro* 'shelf' ← PA **t^{h}ařo-* > MidA *t^{c}aṙ* (*i*) 'roosting perch, stake for supporting vines' (HAB II: 155; see IV 32 for further discussion of the Armenian word). The principal objection to this equation is the semantic difference and the late attestation of the Armenian word in the 13th c. translation of *Geoponica*, where it is

identified during this research, however. One finds Armenian loanwords in Zan, but they are relatively few and in any case late. As such, they are not relevant to the present work. For such material, one may consult Łap^{c}anc^{c}yan 1952 with due caution.

[16] Curiously, J̌ahowkyan (2010: 222) records a far less compelling etymology (with reference to Ałayan). He reconstructs **per-to-*, comparing Av. *pərətu-* 'crossing, bridge', Lat. *porta* 'gate'. I would expect this form to yield ***herd*.

exclusively an *i*-stem. However, the otherwise impeccable derivation from PIE **trs-o-* shows that the Armenian word must be inherited and was originally an *o*-stem. As noted by Ačaŕyan (HAB II: 155), the meaning 'shelf' is also found in the J̌owła dialect. This dialect is spoken in Iran, i.e. not in direct contact with Georgian, which suggests that this (by-)meaning is relatively old, thus explaining the semantic difference between the attested Georgian and Armenian words.

III 41. Ge. თელა *tela* 'elm' ← PA *t^{h}el-a-* > Arm. *t^{c}eł-i* (*ea*) 'elm' (Bugge 1893: 39, HAB II: 172). The Armenian form reflects a substrate word comparable to Gk. πτελέα 'elm' (see IV 34). The derivation with *-i*, typical of tree names, is inner-Armenian. This means that the Georgian form preserves an original underived *a*-stem (< **ptel-a-*). The substitution Arm. *ł* → Ge. *l* is typical of older loanwords from Armenian to Georgian, cf. Ge. *alkaṭ-* 'poor' ← Arm. *aṫk^{c}at* 'id.', as opposed to the later substitution *ł* → *ɣ* (cf. Słuszkiewicz 1974, J̌ahowkyan 1973a: 95).

III 42. OGe. კალო *ḳalo-* 'threshing floor' ← PA **kalo-*, Arm. *kal* (*o*) 'threshing floor, corn sheaves' (HAB II: 483, J̌ahowkyan 1987: 590). The Armenian word has no clear etymology, but must contain the same root as Arm. *kasowm*, *kasem* 'to thresh' and *kamn* 'flail, threshing sledge'.[17] J̌ahowkyan (1987: 528) assumes that this root is etymologically identical to *kasowm* and *kasim* (intr.) 'to cease, diminish' which seems less likely for semantic reasons. Klingenschmitt (1982: 241) tentatively proposes a root **g^{w}aḱ-* 'to beat', reconstructing *kal* as an instrument noun **g^{w}aḱ-tlo-* (cf. Olsen 1999: 35–6). His comparison with Gk. βάκτρον 'stick' is, however, not compelling since this likely represents a European substrate word with initial **b-*, cf. Lat. *baculum* 'stick, staff', OIr. *bacc* 'hook, crooked staff' (Schrijver 1991: 100).[18] Nevertheless, it is clear that a verbal root **kas-* 'thresh', whatever its origin, existed in Armenian. As suggested by Olsen (1999: 36), the phonetic development of quasi-IE **-ḱtl-* > *-l-*

[17] Arm. *kamn* has been compared to OCS *gumьno* 'threshing floor' (HAB II: 502), but the Slavic word is generally considered to be a compound 'where cows step (on grains)', see Vasmer 321.

[18] Klingenschmitt's proposal of a Latin borrowing from Sabellic is not of much help, since the Celtic forms, from PC **bakko-*, cannot be from Latin. Additionally, the potential Germanic cognates, e.g. MDu. *pegge* 'peg, pin', would have to be ignored.

may be supported by *t^{c}el* 'thread' if from **teḱ-tlo-*.[19] This renders it most probable that the borrowing direction of this word was from Armenian to Georgian (Gippert 2005: 152 fn. 59, *pace* Vogt 1938: 331, Cardona 1983: 50).

III 43. Ge. ლარო *laro* 'stonemason's string, pronged weaving cord' ← PA **laro-*, Arm. *lar* (*o*) 'rope' (HAB II: 268). The Armenian form is usually reconstructed as **(H)ulh$_1$ro-* (Olsen 1999: 30, EDA 304), comparing Gk. αὔληρα, εὔληρα 'reins', Lat. *lōrum* 'leather strap'. However, the formal issues involved suggest that this could reflect a substrate word. The assumption that the Georgian word was borrowed from Proto-Armenian, which is supported by the identical vocalism and the Georgian stem-final *-o* matching the Armenian *o*-stem, speaks against the reconstruction **(h$_2$)ulh$_1$ro-* because pretonic **i* and **u* is usually preserved in Georgian loans from Armenian, hence one would expect ***ularo*. This may suggest that Arm. *lar* in fact reflects something like **u̯lă̆ro-* with a consonantal **u̯* which was lost at an early point, as assumed for Latin. For further discussion, see IV 39.

III 44. OGe. მდელო *mdelo-* 'grass', Ge. *mdelo* 'meadow (grasses)' ← PA **deło-* > Arm. *deł* 'herb, grass' (J̌ahowkyan 1973a: 93, 1987: 590, Schmidt 1992: 300). The Armenian word reflects **d^{h}elh$_1$-o-*, perhaps originally from **ǵ^{h}elh$_3$-* 'green-yellow' (see s.v. *dalar*, IV 26 for further discussion).

III 45. OGe. ფაფვალა *paçala-*, *paçal-* 'spleen' (→ Laz *pa(n)çala* 'spleen'), *paçil-* can be equated with Arm. *p^{c}aycałn* (*-an*, *-amb*) 'spleen' (HAB IV: 478). The Laz form must be borrowed from Georgian, because *a* has not shifted to *o*. Alternatively, it was borrowed directly from Armenian, though this seems less likely due to the almost exact similarity of the Georgian and Laz forms. The Armenian word has long been connected with other Indo-European words for 'spleen', cf. Gk. σπλήν, Lat. *liēn*, and Skt. *plīhán-* (EDA 648–9 with references). The impossibility of reconstructing an exact preform, probably the result of various taboo distortions, does not cast doubt on its inherited status.

The Georgian form can reflect an unsyncopated form **p^{c}a(y)całan* with loss of the final *-n*. It is difficult to say whether the,

[19] The intermediate steps may have involved an assimilation of the intermediate cluster **-ćt-* > **-t-* and subsequent simplification **-tl-* > *-l-* as in *owl* 'kid' < **putlo-*.

presumably epenthetic, *-y-* had not yet appeared in the Armenian form ,or whether it was dropped due to the fact that diphthongs do not appear in native Kartvelian words. The epenthetic nasal of the Laz form can, however, easily be secondary as it frequently appears sporadically in both inherited and borrowed words (e.g. Meg. *onṭ̣ka* ← Ru. *vódka*, cf. Deeters 1927: 11; see also § 3.1.0.4). Thus, it does provide positive evidence for an Armenian preform **(s)p(l)ńǵ-*, as suggested by Martirosyan (EDA 649).

III 46. OGe. ფონი *pon-* 'ford' ← PA **pʰon-(V)-* > Arm. *hown* (*i*) 'ford' (Tomaschek 1883, Čubinašvili 1887: 1312, HAB III: 123, Vogt 1938: 331, Bielmeier 1994: 430, Gippert 2005: 151, EDA 425–6). The Armenian form reflects **pontH-*, a stem remodelled after PIE **pont-VH-/pnt-H-*, cf. Av. *paṇtå*, *paϑō* 'road', Lat. *pons*, *pontis* 'bridge' (Olsen 1999: 194–5, EDA 426). If Olsen (1989) is correct in suggesting that PIE **-nt-* became *-n-* only in originally pretonic syllables (otherwise *-nd-*), the loss of the dental in this word probably means that the oxytone accent of the oblique cases was generalized (cf. Kümmel 2017: 444). In any case, the loss of the dental shows that Ge. *pon-* must have been borrowed from an early form of Armenian, not PIE. Otherwise, the loan antedated the shift of **oN* > *uN* (cf. Ałayan 1985), but could have postdated the first stage of the Armenian sound shift, i.e. **p-* > **pʰ-* (or **f-*), the intermediate stage in the development to *h-*. I cannot verify the forms Meg. *poni*, *foni* and Sv. *fon*, *la-fan*, cited by Hübschmann (1897: 397) and Ačaṙyan (HAB III: 123), but given the considerable antiquity of this borrowing, it is likely that the word existed at the Georgian-Zan stage.

III 47. OGe. რუ *ru-* 'runnel, channel' ← PA **r̄u(y)-V-* > Arm. *aṙow* (*i/o/a*) 'brook, channel' (HAB I: 265). An isolated word in Georgian. The Armenian word is evidently inherited from PIE **sru-to-* (cf. Skt. *srutá-* 'stream, river', Gk. ῥυτός [adj.] 'flowing', Swiss G *Strod* 'jet, gulp') or a similar derivative from **sreu-* 'to flow' (J̌ahowkyan 1987: 237, Olsen 1999: 38, EDA 115).[20]

[20] The derivation from **sru-ti-* (Gk. ῥύσις 'flow, course of a river') is equally likely, and it is possible that the competition between original *i-* and *o-*stems is still reflected in the vaccilation of *i/o-*stems in the oldest Armenian sources. Among the other options noted by Martirosyan (EDA 115), the *o-*grade forms would have yielded ***aṙoy*, while the reconstruction **sru-i-o/eh₂-*, going back to Hübschmann (1897: 420), would be morphologically isolated, as noted by Olsen (1999: 115 fn. 70).

The Georgian word is mostly assumed to be borrowed from NP *rōd* 'river', cf. OP *rautah-* 'river' (Čubinašvili 1887: 1042, Klimov & Xalilov 2003: 207–8). However, this borrowing would probably have been reflected as a consonant stem and thus given ***rod-* or ***rud-*, cf. the parallel OGe. *pol-* 'money' (Ge. *pul-*) ← NP *pūl* 'small coin'. At any rate, the loss of final *-d* cannot be explained. For the match with Arm. *aṙow* to be exact, the only required assumption is that it took place before the addition of the prothetic vowel *a-*, a development which at least did not end before the appearance of the first Iranian loanwords in Armenian, cf. Arm. *aroyr* 'brass' ← **rauδ-*, MP *rōy* 'copper, brass' (Hübschmann 1897: 111, HAB I: 331).[21]

III 48. OGe. ს ა ლ ა *sala-* 'flat, round pebble, (adj.) steep', *sal-* 'cliff, (adj.) steep, hard' ← PA **sal-a-* > Arm. *sal* (*i*) 'slab, paving stone, anvil' (HAB IV: 155–6, EDA 564). PA **sal-a-* may be cognate with Skt. *śilā́-* 'stone, rock, crag' (HAB IV: 155, EDA 564).[22] The Skt. *ā*-stem would match PA **sala-*, which underlies the Georgian form. The existence of an *a*-stem next to the attested Arm. *i*-stem may also account for the missing *i*-epenthesis (the reflex is not ***sayl*, that is). This means that the reconstruction of a full grade form **ḱaHl-V* (Olsen 1999: 100–1) is not strictly necessary. Although an equation of the Georgian stem final *-a-* and the Armenian thematic vowel is entirely possible, this example calls for more caution, because Georgian also has a suffix *-a-* with a diminutive function (i.a.), cf. *ḳaca-* 'little man' next to *ḳac-* 'man'. Although we are clearly dealing with a loanword from Armenian to Georgian, we cannot be entirely sure of its antiquity.

[21] Ačaṙyan (HAB I: 331) also suggests that Ge. *rval-* 'copper, brass' is a loan from Armenian, in which case it would also antedate the addition of the prothetic vowel. The dissimilation of the second **r* > *l* is also seen in the Ge. PN *Grigoli* ← Arm. *Grigor* and is unproblematic. The medial *-va-* is, however, more unclear. Perhaps, it betrays the insertion of a supporting vowel, i.e. Arm. **rowr-* → **rowar-* > **rwar-*, but there would be no parallels for such a development. Bielmeier (1994: 431) reconstructs the input of the Georgian form as **ror*, which could explain *rval-* as a result of the frequent alternation of **o* and **wa* in Kartvelian languages (e.g. Ge. *ḳvaml-*, *ḳoml-* 'smoke'). The form **ror* cannot be accurate, however, because there is no way for it to develop into Arm. *aroyr*. For this reason, it is mostly assumed that the Armenian word was borrowed from a North-West Iranian form that still had a diphthong.

[22] Uralic **šVra* (Fi. *hiera*, Udmurt *šer* 'grindstone') may have been borrowed from PIIr. **ćirā-*.

For Armenian *sal*, we may reconstruct a feminine **ḱlH-eh$_2$-* (Skt. *śilā́-*). By assuming an original PIE mobile *n*-stem[23] **ḱolH-ōn-*, **ḱlH-n-* 'stone, rock', it is possible to compare PGm. **hallu-* (< **ḱolH-n-u-*; Go. *hallus* 'rock', ON *hallr* 'stone'), and **hulli-* (< **ḱlH-n-i-*; OE *hyll* 'hill'), Lat. *collis* 'hill' (< **ḱolH-n-i-*), Gk. κολώνη 'hill' (< **ḱolH-ōn-eh$_2$-*), and Li. *kálnas*, Ltv. *kaĺns* 'mountain', where the depalatalized velar may have spread from the oblique forms in **klH-n-*. Given these comparanda, it is noteworthy that the Georgian forms seem to have preserved the more archaic meanings of the Armenian word, unless the meaning 'cliff' is secondary.

III 49. Ge. სორო *soro* 'den, burrow, hole' ← PA **sor-o-* > Arm. *sor* (*o*) 'cave, den, hole'. The Armenian word reflects **ḱe/ouHero-* or **ḱouH-r* (EDA 584), an old heteroclitic, cf. Av. *sūra-* 'hole', Skt. *śū́na-* 'emptiness, absence', Gk. κύαρ 'hole (of the ear), eye of a needle', Lat. *caverna* 'cave, hole', and perhaps ToB *kor* 'throat'. The Georgian word is not attested in Old or Middle Georgian sources, but since a consonant stem ***sor-* is not attested, I find it most attractive to assume that the stem-final *-o* reflects the Armenian thematic vowel in this case. This means that the missing attestation of the Georgian word in older sources is fortuitous.

3.4.1.1 Uncertain comparisons

The following comparisons between Armenian and Georgian words remain possible, but are to be considered less certain compared to the comparisons in the previous section. This covers also cases where the etymological identity of compared forms is beyond doubt, but the direction of borrowing cannot be determined, either because neither form has an established etymology, or because one form has been borrowed from a third source, which could potentially have served as a direct source of the other as well.

III 50. OGe. თირკუმელნი *tirḳumel-n-* (PL.TANT), Ge. *tirḳmel-* 'kidney' ← PA **t^{h}rik-mVn-* > Arm. *erikamown-k^{c}* (GEN.PL *-anc^{c}*) 'kidney'. This ingenious equation goes back to Vogt (1938: 332). It has complications, which require some *ad hoc* assumptions, however.

[23] Martirosyan (EDA 565, 682) suggests that **ḱlHn-* > Arm. **saln-* is reflected in the Arm. place names *Saln-a-jor* and *Saln-a-pat*, which seems acceptable, but this *n*-stem can also be secondary (Weitenberg 1985).

For the Georgian form, we must assume a sporadic metathesis of the first syllable, initial *t^hri° → *tir*°. Additionally, we see a dissimilation *°*men*° > °*mel*°, perhaps caused by a colliding *-n-n-* in the plural form, where Georgian added the suffix *-ni-*. This change may also have been caused or catalyzed by the common Georgian participal or appurtenance suffix *-el-* (cf. Gippert 2005: 150). Finally, we see an epenthesis of *-u-* in the Old Georgian form, which, according to Gippert (2005: 150), suggests a preserved labiovelar in PA *-k^wm-. Summing up, we must assume a PA input *$t^hrik(^w)$-*men-*, which underwent at least two sporadic changes in Georgian.

If the PA donor form contained the IE suffix *-*men-*, it shows an *e*-grade where the vowel had not yet been raised by the following *n*. This is consistent with the example Ge. *pon-* 'ford' (III 46). However, the attested Armenian paradigm only provides evidence for *o-* and zero grade forms (*-mown-*, *-man-*). If the Georgian form is indeed borrowed from Proto-Armenian, it entails that the Armenian word used to follow a paradigm like that of *harsn* 'bride' (GEN-DAT-LOC.SG. *-in*, NOM.PL *-ownk^c*, GEN-DAT-ABL.PL *-anc^c*), or that of *azn* 'tribe' (NOM.PL *-ink^c*). That is not surprising if it reflects an old participle, i.e. something like *$treig^w$-mh_1no- (cf. Olsen 1999: 503 on the type). The apparent zero grade of the root does not favour this assumption, however (cf. Gippert 2005: 151). It is possible to assume that the diphthong **ei* of the first syllable would be substituted by Ktv. *-i-*, as diphthongs do not appear in native Kartvelian words. This would be consistent with the assumption that PK (?) *ɣwino- 'wine' is borrowed from PA *$ɣ^wein$-(*i*)*o*-, but other explanations are possible for these forms as well (see III 55).

The most serious problem is that the Armenian word has no certain cognates (cf. HAB II: 56, Olsen 1999: 940). Vogt's derivation from *√$treik^w$- 'twist' relies on the comparison with Lat. *torqueō* 'twist, turn' and Gk. τρέπω 'turn', which is problematic. The Greek form is rather from *√*trep-* (LIV^2 650), and the comparison with the Latin form requires the assumption of *Schwebeablaut*. In view of this problem, it remains possible that the borrowing had the opposite direction, from Georgian to Armenian. This does not improve matters considerably, since there are no comparanda within Kartvelian. In the end, however, a connection between the two forms in question is within the realm of possibility.

III 51. OGe. ფართო *parto-* 'wide, broad' ← PA *pʰartʰ-o-* > Arm. *hartᶜ* (*i*) 'flat, even' (Tomaschek 1883: 1254, Vogt 1938: 331). A parallel for the preserved Ge. **p-* is provided by *pon-* vs. Arm. *hown* 'ford' (III 46). However, there is no way of confirming whether the Armenian word is inherited. A direct comparison with Gk. πλατύς 'wide' (cf. Arm. *layn* 'wide') < PIE **plth₂u-* is impossible since Armenian preserves PIE **l*. It is possible that the Armenian word is a very early borrowing of an Iranian **farϑu-* (cf. Av. *pərəϑu-* 'wide'), where the initial **f-* would be the result of analogy with full grade forms like YAv. *fraϑah-* 'width' (Gippert 2005: 152). Alternatively, it was borrowed from a (Pre-)Alanic language with the regular change of **p-* > **f-* (or **pʰ-*). If so, the final *-o* of the Georgian form suggests that the borrowing went through Armenian. Nevertheless, the comparison remains uncertain.

III 52. OGe. ფორო *poro-* 'hole, pore' ← PA *pʰor-o-* > Arm. *pᶜor* (*o*) 'cavity; belly, bowels' (J̌ahowkyan 1987: 590). Again, uncertainty arises from the fact that the etymology of the Armenian word is not fully clear (Kölligan 2019: 277–8 suggests **pʰeu̯oro-* 'bloated' of onomatopoeic origin). It cannot be compared directly with Gk. πόρος 'ford, passage' (< PIE **√per-* 'penetrate') because initial **p-* yields *h-* (Olsen 1999: 942 fn. 18 invokes taboo influence). If it represents a very early loanword in Armenian, it remains possible that Georgian borrowed it independently from the same source.

III 53. Ge. ფოსო *poso*, *posv-* 'little hollow, niche' ← PA **pʰoso-* > Arm. *pᶜos* (o/i) 'furrow, trench' (HAB IV: 517). The Armenian word is usually considered a borrowing from Gk. φόσσα, itself from Lat. *fossa* 'ditch, trench' (Hübschmann 1897: 387, Olsen 1999: 928). According to J̌ahowkyan (J̌ahowkyan 1967: 123–4 fn. 105), this is unlikely, because the word is an *o-* or *i*-stem in Armenian, and because it is found in most dialects. However, the word clearly belongs to the early layer of Greek loanwords, in which final syllables are lost, and can thus be assumed to have existed in the common ancestor. In the assignment of these early Greek loans to an Armenian noun class, no strict pattern seems to be followed in general. As a parallel for both of these facts, cf. Arm. *pras* (*i*) 'leek' ← Gk. πράσον, recorded in the dialects of Karin, Erevan, Tiflis, Hamšen, and Nikomedia (HAB IV: 144). Due to the semantic difference between the Armenian and Georgian words (the latter only attested in Middle Georgian),

it is very much possible that the Georgian word was borrowed independently from Greek.

3.4.2 Georgian-Zan

III 54. GZ **ć́ero-* 'crane' (Ge. *c̣ero*, OGe. *mc̣ero-* 'crane', Zan (?) *č̣aro* [lex.] 'fishing bird nesting in trees') ← PA **ć́er-o-* 'crane' (Viredaz 2019: 9, Thorsø 2022: 106–7). The Megrelian form is only found in the 18th c. dictionary of Saba Orbeliani (1949: 882), and not explicitly as a Zan form, so it is necessary to assume a Zanism in Georgian. Orbeliani describes it as a bird which nests in trees, making it more likely to mean 'stork' than 'crane'. If there was a semantic shift to 'stork', it is possible that the word is cognate with Sv. (Upper Bal) *č̣ûēr*, *č̣ō̄r*, *č̣er* 'stork' (cf. Nižaradze 2012: 197). According to other dictionaries (Gudjedjiani & Palmaitis 1985: 280, Topuria & Kaldani 1994: 1936), this word means 'crow' or 'rook', in which case it must be cognate with Meg. *k̦varia* 'crow'.

The similarity between GZ **ć́ero-* and the PIE word for 'crane', reflected in Gk. γέρανος, Lat. *grūs*, Li. *gérvė*, Cz. *žeráv*, Oss. (I) *zyrnæg*, *zærnyg*, and Pashto *zāṇa-*, is noted by Rogava (1988) and Klimov (1994a: 162–3), who both place it in the general context of PK–PIE contact.[24] Rayfield (1996: 6) adduces Adg. *q̇erew* 'crane' as well, but there is no way to explain the discrepancy between initial *q̇-* and Ge. *c̣-*. As the only IE language where PIE **ǵ* yields a voiceless affricate, (Proto-)Armenian is the most likely candidate for an immediate source of the borrowing.[25] The PIE NOM.SG **ǵerh$_2$-ōu-* (cf. Kortlandt 1985a: 120) would have yielded PA **cero/u-*, a nearly perfect match for the reconstructed Georgian-Zan form.[26] The Indo-European root is often reconstructed as **gerh$_2$-*, with a velar onset, which may better explain the Balto-Slavic reflexes. The Iranian forms, reflecting

[24] Already in one of the later works of Marr (1935: 256), the two words are juxtaposed as the Armenian word is considered to be an adoption from the later discredited "Japhetic" (Caucasian-Semitic-Basque) substrate.

[25] Klimov (1994a: 162–3) seems to view the Kartvelian form as support for a glottalistic reconstruction **k'erō(u)-*. I would, however, expect a Kartvelian language to adopt such a form as ***k̦ero-*.

[26] I would also note Batsbi *c̣ʕeran* 'crane', which has no Nakh-Daghestanian cognates and possibly reflects a loan from an unattested Ge. **c̣eran-*. In turn, this Georgian form may have been borrowed from PA **ć́er-an-V-*, identical to Gk. γέρανος < **ǵerh$_2$no-*. The Batsbi addition of the laryngeal ʕ after an ejective has a few parallels in other loans from Georgian, e.g. *p̣ʕerang* 'shirt' ← Ge. *p̣erang-* 'id.'.

PIr. **ʃar-na-*, must consequently be explained through contamination with a root meaning 'sing', e.g. Oss. *zar-* (Gąsiorowski 2013: 56). On the other hand, the Balto-Slavic forms can rather easily be accounted for by assuming leveling from the oblique cases, where **ǵr-* would have been depalatalized (Kortlandt 1985a,b). The conflict between these reconstructions is difficult to resolve in itself, but the possibility of a Proto-Armenian reconstruction **cero-* helps tip the scale in favour of reconstructing a palatal.

An outstanding issue is the GZ affricate **ḉ* whose place of articulation varies depending on the school of Kartvelian reconstruction followed (see § 3.1.0.2). The similarity to the Proto-Armenian form is greatest when employing the reconstruction of Mačavariani and Klimov, in which it is a "hissing-hushing" affricate. Yet, it is very likely that the articulation of PK **ç* was still closer to the attested articulation of Armenian *c*. Therefore, it seems necessary, in any case, to assume that this borrowing happened at a time before PIE **ǵ* had shifted fully to a dental affricate, i.e. at an intermediate stage such as (a fronted) **č*.[27] Thus, following the reconstruction of Schmidt and reconstructing GZ **ç̌ero-* does not appear to hamper the comparison with Armenian in any significant way. The lack of parallel examples obviously makes these considerations speculative.

Arm. *kṙownk* (GEN.SG *kṙnkan*) 'crane' is the only attested reflex of the PIE word.[28] It is the result of an unclear sequence of changes (whether phonological and/or morphological) and has perhaps been subject to onomatopoeic influence as well (cf. Greppin 1978: 103; EDA 377, noting Skt. *krúñc-* 'crane'). As for initial *kṙow-*, it is possible to start with the oblique stem **ǵrh$_2$-u-* > **ǵruh$_2$-* (cf. Lat. *grūs*) which would undergo depalatalization, but the lack of expected metathesis in the initial cluster (not ***Vrkownk*) makes it necessary to assume the insertion of a vowel which would have been reduced in the pretonic position, i.e. either **i*, **u*, **ē*, or **ō*. Kortlandt (1985b: 10) assumes that this vowel was an analogical lengthened grade **ē* after monosyllabic nouns, which seems speculative. Whether or not Arm. *kṙow°* ultimately reflects the original oblique stem **ǵrh$_2$-u-* is not consequential, however. On the basis

[27] The existence of such an intermediate stage may be supported by Arm. *kʿac* 'bitch', probably an old Daghestanian loanword closest to Lezg. *kač* 'bitch' (cf. Lak *kːač*, Hunzib *kača*, Avar *gwaži* < PD **gwažV-*).

[28] In view of its consonantism, the late hapax *grē*/*greay* in Grigor Magistros is at best an Iranian loan (Greppin 1978: 103).

of the Georgian-Zan forms, there is basis for assuming that the morphologically unchanged NOM.SG survived long into the prehistory of Armenian.

3.4.3 Proto-Kartvelian?

III 55. PK **ɣwin(o)-* 'wine', (OGe. *ɣwno-*, GEN.SG *ɣwn-isa*, Ge. *ɣvino*, Zan *ɣvin-*, Sv. *ɣvin-el/-äl*). The similarity with the Indo-European word for 'wine' has long been noticed (Klaproth 1823: 106, NBHL I: 553c, Bopp 1847: 28, Tomaschek 1883: 1254). On account of the initial PK **ɣw-*, which may represent an intermediate stage of the Armenian development **u̯ > g*, it appears to be borrowed from an earlier form of Arm. *gini* (ea) 'wine' (NBHL I: 533c, Pedersen 1906a: 458, HAB I: 558–9, EDA 214–5, Gorton 2017: 22). The Armenian word is compared with Gk. οἶνος, Alb. *verë*, Lat. *vīnum* (< PIt. **u̯īnom*, cf. Fal. *uino* (ACC.SG), Umb. *vinu*), and HLuw. *u̯i̯an(i)-* 'wine'. Although the Indo-European pedigree of this etymon has often been questioned, it is without linguistic reasoning. It can be derived from a root **√ueih₁-* 'to wind'. Beekes (1987) reconstructs a hysterodynamic *n*-stem: NOM.SG **uéih₁-ōn*, ACC.SG **uih₁-én-m*, GEN.SG **uih₁-n-ós* (cf. also Lipp 2019). Olsen (1999: 440 fn. 501) is sceptical of such a reconstruction, since it would "necessitate an analogical explanation for οἶνος and leave Lat. *vīmen*, Skt. *véman-* 'Webstuhl' on a sidetrack." For Greek, an analogical introduction of the accented *o*-grade after the stem had become thematic is, however, quite trivial. This could have been a shared innovation with Albanian. On the other hand, Beekes (1987: 24) admits the possibility of starting from a NOM.SG. **uoih₁-ōn-*. Analogy is at any rate inescapable. For instance, the Italic forms require the zero grade of the root, which would be less explicable if starting from a thematic paradigm. Moreover, Kloekhorst (2008: 1012) points out that all Anatolian forms are explicable as *n*-stems. Lat. *vīmen* 'bending twig, osier' can reflect **ueHi-mn-* or a later construction (cf. Schrijver 1991: 245), while the meaning of Skt. *véman-* is very uncertain (EWAia II: 583–4).

Already Hübschmann (1897: 397) is sceptical of the relation between the Armenian and Kartvelian forms, and considers the similarity to be fortuitous. To be sure, the assumption of a loanword poses a chronological problem, namely that it would seemingly require the reduction of unstressed (**e/oi- >*) **ē > i* to be later than the change of **ɣʷ > g*. This is apparently contradicted by the

treatment of Iranian loanwords where unstressed *ē* becomes *i*, but *v* is preserved, cf. Arm. *višap* (< **vēšap*) and Ge. *vešapi* 'dragon' ← MIr. **u̯ēšāp-* (Ravnæs 1991: 85 fn. 1). On the other hand, there is nothing inherently unlikely about the assumption that, at some point in its development, Proto-Armenian possessed a phoneme */ɣʷ/ (< PIE **u̯*) while at the same time, it introduced a new (markedly different) /v/ through loanwords. Following the logic of this objection, however, we would expect PK ***ɣwen-* if the borrowing antedated the change of PA **ɣʷ* > **g*, and ***gin-* if the borrowing postdated that change. At least two solutions may be adduced.[29] First, if we assume that the borrowing into Kartvelian was considerably earlier than the Iranian loanwords in Georgian, where the high diphthongs (= Arm. *ēi*) are uniformly reflected as *e* (see e.g. Gippert 1993), it is possible that PA **ei* was not reflected as **e* but as **i*. In any case, this assumption is required if the borrowing was into Proto-Kartvelian.[30] This is admittedly hard to establish due to the lack of parallels. Alternatively, we may follow Gippert (1994: 120) and assume that, next to the PA stem **ɣʷein-* (< **u̯oin-*, Arm. *gin-i*), there was a form **ɣʷino-* (< **u̯iHno-* = Lat. *vīnum*) which would have yielded **gin*, GEN.SG **gnoy* but was lost at the preliterary stage after being loaned into Kartvelian. The latter scenario is favoured by the fact that the Old Georgian word shows an irregular and unparalled declension pattern: NOM.SG *ɣwno-y*, GEN.SG *ɣwn-isa*, i.e. a combination of *o*-stem and consonant stem. A consonant stem is found in Megrelian and Svan too. According to Neri (*apud* Lipp 2019: 204), this points to different "adaptations" of the Armenian stem in **-io-*. I find it more likely to reflect the fact that within Armenian itself, there was competition between the forms **ɣʷēn-io-* and **ɣwin-o-*.

Fähnrich (2002: 35–6, 2007: 486) considers **ɣwin-* to be a native Kartvelian root, a nominal derivation from **ɣun-* 'krümmen, biegen,

[29] At any rate, Klimov's remark (1998: 227, but not found in the original Russian version) that "the change **u̯* > *g* probably must have been accomplished there [in Armenian] long before the first Kartvelian-Armenian contacts in the 7th–6th centuries B.C." is completely circular and otherwise baseless. Elsewhere (1994b), Klimov presents the idea that PK **ɣw-* is directly borrowed from **Hu̯-*, but the Anatolian evidence makes it unlikely that the word for 'wine' had an initial laryngeal. In any case, this is impossible to demonstrate.

[30] This scenario does not require the assumption that the Armenian form reflects PIE **u̯eiHn(i)o-*, because since the outcome of both **oi* and **ei* was eventually *ē* (pretonically > *i*), there is ample reason to suppose that they initially merged in **ei*.

winden' with "umlaut" **u* > **wi*.[31] Semantically, this is unproblematic, considering that the formation would be parallel to PIE **ueih₁no-*. However, it does not seem to be the most economical solution. The extralinguistic argument, adduced by e.g. Klimov (1994b: 64–5), that the South Caucasus presents some of the oldest archaeological evidence for wine cultivation and processing is irrelevant. This material evidence goes back several millennia before the assumed existence of Proto-Kartvelian, and there is no way to tell if its ancestor language was spoken in the same region. Besides, it is far from unexpected for a language to borrow words for phenomena or technology for which words already exist (cf. Gamkrelidze & Ivanov 1995: 560 fn. 64, further Greppin 2008a).

In sum, the most economical assumption is that the preform of Ge. *ɣvino* was borrowed from Proto-Armenian. It must have preceded the change of **ɣʷ* > *g* in initial position but otherwise, its dating presents a conundrum. In particular, we cannot be sure that the word actually existed in this form in Proto-Kartvelian, because the forms found in all the daughter languages are based on identical stems. The aforementioned vaccilation between *o*-stem and consonant stem may in fact favour the assumption that the word spread posterior to the dissolution of the Kartvelian languages. On the other hand, the Svan diminutive suffix *-el*/*-äl* is no longer productive, suggesting that the word has some antiquity there (Klimov 1998: 227). After all, however, the word cannot be used as evidence for direct contact between Proto-Armenian and Proto-Kartvelian.

3.4.3.1 Discussion

Certainly, any hypothesis of direct contact between Proto-Armenian and Proto-Kartvelian remains controversial. This is because the diffusion of Kartvelian is usually assumed to have taken place around the beginning of the third millennium BCE (Klimov 1964: 34–5). On the other hand, this date is mainly based on glottochronological methods and therefore fraught with much uncertainty. The assumption that Proto-Kartvelian absorbed Indo-European loanwords (e.g. Klimov 1994a, Smitherman 2012) is not necessarily an

[31] I have not been able to find other examples of such an umlaut in the Kartvelian languages, however, and I suppose that Fähnrich follows Gamkrelidze & Maçavariani (1982) in assuming that the alternation of **u* and **wi* betrays a kind of *ablaut*.

obstruction to the assumption that PK was spoken later than PIE. Loans from PIE may have entered into an ancestor of PK, or alternatively, passed through a different language before entering PK at a later date. At the same time, as noted in the introduction to this chapter, none of the alleged PIE loanwords in Kartvelian are fully convincing. Direct contact between these two proto-languages is indeed unlikely under the usual assumption of a PIE homeland in the Pontic-Caspian steppe and a PK homeland not further north than the present location of the Kartvelian languages.

At the same time, as briefly mentioned in § 3.4, it is possible that in some cases, Proto-Kartvelian reconstructions showing virtually no subsequent sound changes actually reflect words that have spread throughout the Kartvelian language area after these languages had already diverged from one another. The case in point is **ɣwino-* 'wine' (III 55), where for phonological reasons, any connection to the Indo-European word for 'wine' most likely goes through Proto-Armenian. Nevertheless, it does not prove that Proto-Kartvelian and Proto-Armenian were in direct contact.

3.4.4 Rejected proposals

These rejected proposals include both words deemed to be incomparable, as well as loans that postdate the onset of Armenian literacy, and are thus outside the scope of this work.

III 56. Ge. Ამო *amo* 'tasty, pleasant' ← PA **hamo-*, Arm. *ham* (*o*) 'taste' (HAB III: 17, J̌ahowkyan 1987: 590). The Armenian word reflects **sHp-mo-*, cf. Lat. *sapiō* 'to taste', ON *safi* 'juice' (Olsen 1999: 27). Although the comparison is compelling, it hardly belongs to the archaic loanwords with preserved thematic vowel. Given the adjectival meaning, the Georgian word must be an internal derivation with the adjectival suffix *-o* or a late borrowing of Arm. *hamov* (INST.SG) 'tasty', cf. also Ge. *si-amov-ne* 'pleasure, delight'.

III 57. GZ **gza-* 'way, path' (OGe. *gza-*, Meg. *za-*, Laz (*n*)*gza-*; Klimov 1964: 62) ← PA **geza-* 'road' < **u̯eǵʰ-eh₂-* 'road', cf. Go. *wigs* (J̌ahowkyan 1991: 37–8, EDA 201). A continuant of *u̯eǵʰ-eh₂-* could theoretically have existed in pre-literary Armenian, and the formation is transparently a feminine/collective derivation of **√u̯eǵʰ-* 'to convey' (cf. especially Alb. *udhë* (fem.) 'way, journey' < **uǵʰ-eh₂-*). The substitution of PIE **u̯* for *g* in Kartvelian diverges from the

example **ɣwino-* (III 55). Thus, the loan would have postdated the final stage of the development to *g-* and thus be comparatively late. The assibilation of intervocalic (**-ǵʰ-* >) **-j-* > *-z-* was potentially relatively late as well (see fn. 7). This makes it chronologically difficult to assume that the loan entered Georgian-Zan. The existence of this etymon at the GZ stage is supported by Ge. *sa-gz-al-*, Meg. *o-rz-ol-* 'breakfast', if the original meaning was 'provisions for the road' (Klimov 1964: 168). The Megrelian cluster *-rz-* (initial *z-*) also shows that the cluster **gz-* is old and not a result of syncope from ***geza-*, as must be assumed if the word came from Proto-Armenian.

III 58. GZ **werćxl-* 'silver' (Ge. *vercxl-*, Meg. *varčxil-*) ← PA ? > Arm. *arcatᶜ* 'silver' (J̌ahowkyan 1987: 590, J̌ahowkyan 1990: 31). The sound substitution **a* (**h_2e*?) → *we* and the stem-final cluster **-xl-* cannot be explained. On the whole, the two etyma are only faintly similar.

III 59. GZ **werʒ́-* 'male, ram' (Ge. *verʒ-* 'ram', Meg. *erǯ-* 'male, ram') ← Arm. *orj* 'male', *yorj* 'ram' (J̌ahowkyan 1987: 590, 1990: 31). The sound substitution *o* → *we* is unexplained. Martirosyan (EDA 540) proposes that the source of borrowing is Arm. *yorj* 'ram, *testicled' (< *i-* + *orj* < **$h_3erǵ^h$-* 'testicle'), assuming the Armenian word had the realization /uird͡z/ or /werd͡z/. To support this, he adduces Ge. *xv*(*i*)*tk-* 'crododile' ← Arm. *xoytᶜ-kᶜ* 'id.'. This must be a much later loan, however. The post-classical realization of Arm. *oy* as /uj/ and the lack of any such diphthong in Georgian words explains the substitution by /wi/. There is no support for the assumption that *yorj* was pronounced /uird͡z/ or /werd͡z/, on the other hand.

III 60. Meg. *nosa* 'daughter-in-law, sister-in-law', Laz *nusa*, *nisa*, *nusava* 'wives of two brothers' ← PA **nusa-* > Arm. *now* 'daughter-in-law' (HAB III: 467). Ačaŕyan assumes that Adg. *nəsa* 'daughter-in-law' was also borrowed from a Proto-Armenian form. However, similar words for 'daughter-in-law' and 'bride' (vel sim.) are widespread in the Nakh-Daghestanian languages, which thus looks like the centre of distribution for the etymon, cf. Ch., Ing., Batsbi, Avar *nus*, Andi *nusa*, Akhvakh *nuša* 'bride', Archi *nus-du-r* 'son's wife'. The word is, however, not found in Svan or Georgian (apart from dial. *nusadia* 'uncle's wife', perhaps borrowed from a Zan language).

Although the ultimate origin of this Caucasian *Wanderwort* is probably PIE **snuso-*, its distribution makes it unlikely that it originally spread from Proto-Armenian. More importantly, there are no

parallels for the preservation of PIE **s* in a loanword from Armenian. The change of **s* > *h* or ∅ in Armenian is a very early sound change (Kortlandt 1980: 27–8). For this reason, a more conceivable source of this Caucasian areal word is an early Eastern Iranian (pre-Alanic) dialect, cf. Oss. (D) *nostæ* 'daughter-in-law' < **snauša-* or PIIr. **snuša-*. This is especially conceivable, if one assumes that the word spread through Nakh, where a cluster *sn-* is disallowed (Tuite & Schulze 1998).

III 61. ⴑⴡⴝ (ⴖⴡⴝ, ⴛⴡⴝ) OGe. *sṭo-*, *štʼo-*, *rṭo-* 'branch' ← PA **ost-o-* > Arm. *ost* (*o*) 'branch' (Vogt 1938: 332). The Armenian word is clearly inherited (< **He/osd-*, cf. Gk. ὄζος, Go. *asts* 'branch'; EDA 534). The hypothesis of an archaic loan into Georgian is thus appealing on the surface, but there is no way to explain the loss of initial *o-* and the variants with *š-* and *r-* in Georgian. Ačaŕyan assumes that the form with *š-* was borrowed from an unattested "Northern" dialect of Armenian (comparing the variants *anost*, *anošt* 'without branches'). This is at least chronologically unproblematic, since the variant *štʼo-* is not attested before Middle Georgian. On the other hand, this *štʼo-* may also be a Zanism, which would point to a GZ **śṭo-* that regularly became Ge. *sto-*. The variant *rṭo-* is attested already in Old Georgian, however, and finds no regular explanation. Although these Georgian forms may well be loanwords, it remains very uncertain whether they were borrowed from Armenian.

III 62. PK **soḳo-* 'mushroom', cf. Ge., Zan *soḳo*, Sv. *soḳû* 'mushroom'. The word is not attested in Old Georgian and may result from later contact, but no formal circumstances exclude Proto-Kartvelian inheritance. Nevertheless, Ačaŕyan (HAB IV: 252) considers it a loan from Arm. *sownkn*, (*sowngn*, *sownk/g*) 'mushroom' (hesitantly, Thorsø 2022: 104). The Armenian word itself is usually analyzed as a substrate word connected to Gk. σπόγγος, σφόγγος 'sponge'. Due to its late attestation (*Geoponica*, 13th century), it cannot be determined whether the forms with final *-n* are primary. As a consequence, a reconstruction PA **sonko-* is possible. If it is accepted that this form was loaned into Kartvelian, the most problematic issue would be the loss of the first **-n-*. After all, however, it is more likely that the Kartvelian and Armenian forms are both independent borrowings from Nakh-Daghestanian languages, cf. Tsez *ziḳu*, Bezhta *zoḳo*, Avar *sːaḳ*, Udi *šaʿmkːal*. For a more in-depth discussion, see IV 75.

III 63. GZ **sx*(*a*)*l*- 'to hack, prune' (Ge. *sxlevs* 'to prune', Meg. (dial.) *rsxilua* 'pruning') and *sxl*-(*e*)*ṭ*- 'to slide, glide' (Ge. *sxleṭs* 'to break off; slide, slither') ← PA **sxal*- > Arm. *sxalim* 'to err, fail, stumble' (Vogt 1938: 333). The Armenian word reflects *√*skHel*-, cf. Skt. *skhálati* 'stumble, stammer, fail'. The Armenian and Georgian-Zan meanings are too distant, however. Klimov (1994a: 135–6) rejects that the donor is (Proto-)Armenian, but believes it was still an IE language. He reconstructs the meaning "sryvat'(sja) s mesta, ostupat'sja" (be plucked off, stumble) closer to the putative derivative *sxl*-(*e*)*ṭ*- and assumes that the meaning 'to prune' is secondary. This seems quite far-fetched.

3.4.5 Analysis

The most unproblematic part of the material in this section are those words that surface in nearly the same form in Armenian and Georgian. The only discrepancy they exhibit is the presence in Georgian of the thematic vowel, which was eventually lost in Armenian. A subsection of these words are clearly inherited from PIE, implying that they were borrowed from Armenian. Others do not have a secure IE etymology. Other words in this category are conspicuous, because they preserve additional phonemes that have since changed in the Armenian form.

Given the potential dating of the Georgian-Zan protolanguage in the late second millennium BCE, the language contact between Proto-Armenian and Georgian-Zan can perhaps be pushed back to the time of the Nairi confederation in North-East Anatolia, which formed following the collapse of the Hittite empire in the twelfth century BCE, and which, according to the Assyrian king Tiglath-Pileser I, consisted sof 23 individual polities, stretching from the Lake Urmia area to Northeast Anatolia. Some of these tribes, such as the Kaškai, Tibal, and particularly the Diaueḫi have been considered Kartvelian-speaking (Suny 1994: 6). On the basis of the Proto-Armenian loanwords in Georgian-Zan, it seems possible that Armenian-speaking people were among the Nairi as well.

Additional support for this tentative dating and location comes from relative chronology. Most crucially, the form Ge. *poni* 'ford' (III 46) demonstrates that Armenian-Kartvelian contact took place before the Armenian change of initial **p*^{h}-, **f*-, **ɸ*- vel sim. (< PIE **p*-) to *h*- and before the change of **oN* > *un*. Despite its uncertain nature,

we may also recall the example of OGe. *tirḳumelni* and Arm. *erikamn* 'kidney' (III 50), which could represent a loan in either direction. If so, it would also precede the loss of Armenian initial **t^h-* (vel sim., < PIE **t-*) before *-r-*. Recalling the relative chronology of the Armenian–Hurro-Urartian contact (§ 2.4), postdating the spirantization of original PIE *tenues*, and probably the raising of **o* before nasals, the movement of Armenian loanwords into Kartvelian appears to have predated Urartian loanwords into Armenian by some time.

3.5 Loanwords with unknown trajectory

Table 3.4 contains etyma shared by Armenian and Georgian whose direction of borrowing is impossible to ascertain. Mostly, Ačaŕyan (see references to HAB) tends to consider these loans as having passed from Armenian to Georgian, but only occassionally, the Georgian stem-final *-o* supports this assumption. Out of caution, it is best not to conclude too much on the basis of this feature alone. Although comparatively rare (cf. Gippert 2005: 152), Kartvelian *-o* was a derivational suffix (cf. Fähnrich 2007: 324). Stems in *-o* may be, for example, original formations with the circumfix **ɬa- -o*, now restricted to proper nouns (Fähnrich 2007: 722).

Armenian	Georgian	References
akowtᶜ 'oven, stovetop'	*aḳuta* 'id.'	HAB I: 110
banǰar 'herb, vegetable'	*banǯar-* 'green herb'	HAB I: 409
tᶜepᶜ 'bran, scale'	*tebo* 'dandruff'	HAB II: 178
xawz 'algae'	*mxavs-* 'moss'	HAB II: 432
cor 'barberry'	*ċoro* 'rowan'	HAB II: 469
čał 'bier, sedan'	*č̣al-* 'chassis plank'	HAB III: 178
čałag 'thicket, woods'	*č̣alaḳ-* 'riverbank grove'	HAB III: 178
mtrowk 'donkey foal'	*muṭruḳ-* 'id.'	HAB III: 369
naxir 'herd of cattle'	*naxir-* 'id.'	HAB III: 421–2
owṙn 'hammer'	*uro* 'id.'	HAB III: 609
ǰaxem 'crush, break'	*ǯax-* 'bang, slam'	HAB IV: 119
soči, šoči 'fir, pine'	*soč̣i* 'fir'	HAB IV: 241

Table 3.4: Armenian-Kartvelian mutual loanwords with unknown direction

3.6 Shared loanwords from a third source

Table 3.5 contains words in Armenian and Georgian that are almost certainly related, as indicated by a significant similarity in form and meaning. However, they cannot be borrowings from one another, because they either do not comply with the established sound substitutions, or because they have divergent meanings. This invites the interpretation that the Armenian and Georgian forms are parallel borrowings from a third language. Apart from completely unknown donor languages, which make up the majority of the examples, it is well established that Georgian and Armenian independently borrowed many Middle Iranian words.[32]. Likewise, shared loanwords from Greek were independently adopted in the two languages, on which see Greppin (1988). Furthermore, it may also be suspected that Urartian and unknown Semitic (e.g. Aramaic) languages were significant donors to both languages, but only in very few cases is it possible to establish the exact source.

[32] In some cases, however, Armenian was the mediator (Gippert 1993).

Armenian	Georgian	References
ałtor 'sumac'	*alaṭro* 'id.'	see p. 20 (Urartian?)
antᶜeł 'hot coal, ember'	*anteba* 'burn'	HAB I: 194; **IV 5**
bałarǰ 'unleavened bread'	*blarǯ-* 'crude bread'	HAB I: 397
bałbak 'a herb'	*balba* 'marshmallow'	HAB I: 397–8
bewekn 'turpentine'	*beleḳon-* 'id.'	HAB I: 443–4
gari 'barley'	*ker-* 'id.'	HAB I: 521–2; **IV 22**
gawaṙ 'region, district'	*gvar-* 'clan, tribe'	HAB I: 527
erkatᶜ 'iron'	*rḳina* 'id.'	Vogt 1938: 334
tᶜoṙop 'cuirass'	*tor-* 'armour'	HAB II: 199
ciran 'apricot'	*ċeram-* 'id.'	HAB II: 459–60
cmel 'spinach, beetroot'	*ʒumela* 'cockscomb'	HAB II: 464
kłzi 'island'	*ḳunʒul-* 'id.'	HAB II: 603
kotᶜoł 'obelisk'	*godol-* 'pillar, tower'	HAB II: 614–5
korč 'griffin'	*ġurċ-* (OG) 'a bird'	HAB II: 652
markeł 'mattock'	*margl-* 'id.'	Vogt 1938: 334; **IV 56**
kᶜacᶜax 'vinegar'	*ḳaċax-* 'sour, unripe'	HAB IV: 565; **IV 84**

Table 3.5: Armenian-Kartvelian shared borrowings from a third source

Some of these examples are discussed more elaborately in the following chapter (see the internal references). Here, it will suffice to comment on three of the words.

Arm. *erkatᶜ* 'iron' and Ge. *rḳina* 'id.' It is sometimes assumed that the element *°atᶜ* in the Armenian word spread from *arcatᶜ* 'silver'. This seems conceivable given that *arcatᶜ* may have developed regularly from PIE *$*h_2$rǵnto-* 'silver' (see Kümmel 2017). In contrast, Vogt (1938: 334) assumes that *erkatᶜ* is in fact borrowed directly from Ge. *rḳina*. According to Vogt, the expected outcome *erkin-* is preserved in the form Arm. *erkin-kᶜ* 'sky, heaven'. However, *erkin-* should perhaps not be separated from *erkir* 'earth' (see Kölligan 2019: 104–49 for a critical discussion). It is possible that both the Georgian and Armenian words for 'iron' are ultimately borrowed from a Nakh-Daghestanian source akin to Lezg. *raġ*, OBL *raġ-uni-* 'iron' (Thorsø, Wigman et al. 2023: 114–5).

Arm. *ciran* 'apricot' and Ge. *ċeram-* 'id.' Both of these forms are considered Urartian loanwords by Ačaṙyan (HAB II: 459–60),

solely because apricots are native to the Armenian Highland. It is tenuous to base an etymology on non-linguistic arguments alone, however. Olsen (1999: 450) assumes an input **dž̌iran-* 'golden' from an Iranian dialect. If correct, the loan would have preceded the sound shift, for which only questionable parallels exist (see § 2.4). In this case, we would also expect to see the vowel weakening **ciran* > *cran*. More compelling is the proposal of Viredaz (2009), who assumes a *Wanderwort* with an origin in the mountainous area of South–Central Asia, cf. e.g. Yazgulami *čírai*, Ashkun *cirä*, Kashmiri *cēr* 'apricot'. This aligns well with the assumption that one of the early diffusion routes of apricots reached from Central Asia to the Caucasus (cf. Bourguiba et al. 2020).

Arm. *kłzi* 'island' and Ge. *ḳunʒul-* 'id.' The Armenian form can reflect **kułuz-i*. Gippert (2005: 149–50) assumes that this form was borrowed by Georgian, after which it underwent metathesis **kuluz-* ⇒ **kuzul-*. The epenthetic *n* can be classified as a *Wucherlaut* and ignored (§ 3.1.0.4). However, the replacement of Arm. *z* → Ge. *ʒ* is irregular. As admitted by Gippert himself, the etymology of the Armenian word is unknown. Ačaṙyan (HAB II: 603) considers it to be a borrowing from a Semitic language, cf. Syr. *gazārtā*, Arab. *jazīra* 'island', but this would require us to infer an unattested Semitic language. The source of the forms in Armenian and Kartvelian thus remains unknown, and it may be safest to assume that they were borrowed independently.

Shared substrate 4

This chapter will turn to the oldest layer of loanwords that can be identified in the Armenian lexicon. When Indo-European speaking groups migrated out of the Pontic-Caspian steppe beginning in the fourth millennium BCE, it is obvious that they did not enter a linguistic vacuum. Rather, we should expect that they came into contact with other languages, including languages of a non-Indo-European pedigree. Contact with non-Indo-European languages could admittedly have taken place already at the fringes of the Indo-European linguistic area, while this was still confined to the steppe, as well as further back in time, when PIE was a uniform language. Even in historical times, many non-Indo-European languages are recorded within Europe, including Vasconic languages, Etruscan, and the elusive language of Linear A. It is safe to assume that the expansion of the Indo-European languages resulted in the extinction of other languages, of which no record exists. Yet, some of these unrecorded languages did not fail to leave their mark on the lexica of the Indo-European languages.[1]

[1]Following a now widespread practice within Indo-European linguistics (cf. Lubotsky 2001b), I use the label 'substrate' to refer to such a "ghost language". This use of the term *substrate* is relatively lenient compared to its use in the general field of contact linguistics. To be sure, it is difficult to say anything about the sociolinguistic status of potential substrate languages in relation to Indo-European languages, at

4.1 Methodology

The study of prehistoric, non-inherited lexical elements among the Indo-European languages is not new. The field of substrate studies was pioneered in the works of Oštir (1921), Hubschmid (1950, 1953, 1960) and Kuiper (1956). However, the exact methodology applied in the present study was developed especially in the past three to four decades, e.g. in the works of Polomé (1986, 1989, 1990), Hamp (1990), Huld (1990), Salmons (1992), Kuiper (1995), Beekes (1996, 2000), Schrijver (1997), Lubotsky (2001b), and Kroonen (2012).

What these scholars were able to demonstrate is that prehistoric borrowings from unknown sources can be identified by applying objective and consistent criteria, allowing for a reevaluation of comparisons with inherent irregularities within a new framework. The discovery of traces of systematic alternations in the phonemes in loanwords, found in different Indo-European languages, means that these languages were in contact with the same substrate, or closely related substrate languages. So far, the most extensive study of these prehistoric borrowings in the Armenian lexicon is offered by Martirosyan in his *Etymological Dictionary of the Armenian Inherited Lexicon* (EDA). Martirosyan approaches this problem by applying the fundamental criteria defined by Schrijver (1991) and summarized by Lubotsky (2001b: 301) as follows: "an etymon is likely to be a loanword if it is characterized by some of the following features: 1) limited geographical distribution; 2) phonological or morphonological irregularity; 3) unusual phonology; 4) unusual word formation; 5) specific semantics, i.e. a word belongs to a semantic category which is particularly liable to borrowing."

These five criteria are arguably not of equal weight. In some cases, one of them might be sufficient to suggest that a word is borrowed; in other cases, two may not be sufficient. Frequently, an etymon fulfills only the first criterion (limited geographical distribution) and the fifth (borrowable semantics). These criteria are typically not sufficient to demonstrate that the word in question is borrowed. In many cases, the possibility remains that its cognates were lost in the remaining Indo-European languages (cf. Schrijver 1997: 294). Yet, the semantic criterion is not a binary one. We find

least on linguistic grounds alone. Because they are unattested, we cannot evaluate to what degree non-lexical features (especially phonology and syntax) were exchanged between them and the Indo-European languages.

cases where the semantics clearly indicate a loanword, not just because they are of a very borrowable type, but rather because they refer to phenomena or things that were unknown to PIE speakers for geographic or chronological reasons. For example, it is reasonable to assume that narrowly distributed words pertaining to maritime culture are borrowings, because no significant technical vocabulary within this semantic field has yet been reconstructed for PIE.

Nevertheless, the strongest and most reliable criteria remain formal (Salmons 1992: 267). Our core task is to identify words in two or more Indo-European languages whose formal and semantic similarity makes them obvious candidates for comparison, but which are, nevertheless not fully formally compatible. In the most simple way, this is demonstrated by reconstructing each form in the daughter languages back to its potential proto-form and comparing these "quasi-IE" reconstructions. When such reconstructions differ only in one or two phonemes, or on the level of suprasegmental features, they become strong candidates for loanwords adopted independently from the same source. However, this hypothesis is fully confirmed only by observing what Schrijver (1997: 296) dubbed "regular irregularities". That is *recurring* phonological alternations that, nonetheless, contradict established sound laws (cf. Lubotsky 2001b: 302–3). Secondarily, a word can also be considered to be non-IE when its reconstruction violates PIE phonotactics. This includes roots of the structure **TeD*^{h}, **DeD* and **CeRR*/*RReC* (unless an initial R is labial).

Arriving at a potential corpus of substrate forms, we can attempt to identify recurring morphological features. Examples of such features, which have already been identified, include the suffix Gk. -ι/υνθο- and the "European" prefix *a-*, which typically coincides with vowel reduction in the root (Schrijver 1997: 312). In practice, the material is often so limited that only few examples of a particular regular irregularity can be adduced. For this reason, hardly any recurring alternations have been identified in the Armenian material so far. The identification of such alternations is one of the objectives in this chapter.

On the basis of this methodology, some of the substrate words proposed by J̌ahowkyan (1987), Martirosyan (EDA) and others can now be rejected. On the other hand, new material can be added, which remained outside the scope of previous researchers. The resulting corpus allows for a more robust analysis of the distribu-

tion patterns and semantic fields, and of the chronological stratification. Apart from substrate words that are shared with other Indo-European languages, I categorize some words as 'local borrowings'. These are words adopted after Armenian was already spoken in, or close to, its historical area. This category may thus include loans from such known sources as Urartian and Daghestanian languages, but also literary loans from Greek and from unidentified languages of the Near East.

Forms in boldface denote quasi-Indo-European reconstructions that can be inferred from the attested forms. They do not necessarily represent a phonetic reality to the same degree as Proto-Indo-European reconstructions. Rather, they work as an abstraction with the purpose of demonstrating that the lexemes they represent cannot have existed in Proto-Indo-European.

4.2 Sources

The material for this study is gathered from several secondary sources. The most recent of these sources are the works of Martirosyan (EDA and 2013). This author frequently refers to what he calls the Mediterranean-Pontic substrate, and to the European substrate. Thus, although the EDA is generally limited to a treatment of the inherited lexicon, it is also an invaluable starting point for gathering Armenian lexical material with potential substrate origin. I have included material from these works in this corpus, if it is explicitly analyzed as borrowed from a substrate language. In some cases, Martirosyan does not make this assumption explicit in the main entries, but words of assumed substrate origin are included in the general discussion of substrate languages (EDA 805–7).

In a later paper, Martirosyan (2013) appears to take a somewhat different position on particular words, treating them as inherited words instead. Nevertheless, it is occassionally difficult to extract the criteria for distinguishing between the two following groups of etyma that the author defines. The first is said to include isolated lexemes that have "no Indo-European etymologies and may therefore be treated as words of substrate origin" (2013: 113). This group including isolated roots like **ḱen-* (Arm. *sin* 'empty', Gk. κενός), **net-* (Arm. *nay* 'humid(ity)', Gk. νοτία 'wetness'). The second group is shared innovations (2013: 109–12), a category that also includes isol-

ated roots like *h_3b^hel- (Arm. *awelem* 'sweep, broom', *aweli* 'more'; Gk. ὀφέλλω 'sweep, increase') as well as clear loanwords like Arm. *bowrgn*, Gk. πύργος 'tower'. For this reason, I have attempted to be as inclusive as possible with material gathered from the works of Martirosyan, but lexemes that can clearly represent inherited words will be discussed in less detail here.

In addition to the material gathered from Martirosyan's work, previously unetymologized lexemes have been gathered from Ačaŕyan's etymological dictionary of Armenian (*Hayerēn armatakan baŕaran*, HAB), originally published from 1926–35, second edition from 1971–79. This dictionary is a highly convenient source of material because it is very comprehensive (containing also hapaxes and lexicographical words), and because it offers an easy way to check whether a word is an obvious loanword from a known language. This material was, however, checked against newer literature and various lexicographical works with the attempt of discovering new comparanda. The resulting set of material is presented along with the existing material below. For clarity, however, new proposals of substrate words are separated from accepted, previous proposals.

4.3 Structure of the entries

Since this chapter includes material that requires more elaborate philological and etymological discussion than the previous two chapters, I digress somewhat from the entry structure in those chapters. References to standard etymological reference works (Hübschmann 1897, HAB, Solta 1960, Greppin 1983 [words beginning with A only], Clackson 1994, Olsen 1999, EDA, and J̌ahowkyan 2010) are given at the beginning of each entry. A brief survey of existing, relevant etymological proposals follow under the header **Proposals.** I emphasize proposals that treat a particular word as a borrowing from an unknown (substrate) language.[2] Proposals and additional relevant material are then discussed under the header **Discussion.** The primary objective of the discussion is to apply the

[2] Other than this, it has not been deemed feasible, nor desirable, to discuss the entirety of past proposals, but it is the aim to at least include the proposals preferred by the cited handbooks. The reader may consult in particular HAB and EDA for references to especially older literature which may have been omitted in this work.

methodology established in § 4.1 in order to determine whether an etymon qualifies as a prehistoric borrowing or an inherited word. Finally, the **Conclusion** briefly summarizes the results of my analysis, usually by means of reconstructions alone.

4.4 Material

In this section, previous proposals for substrate words are presented and discussed according to the order of the Armenian alphabet. A summary and categorization according to the results reached in this section are found in section 4.5.

* * *

IV 1. ***ազդր*** *azdr* (*r*) 'thigh, back' (HAB I: 86, EDA 10, J̌ahowkyan 2010: 23).

Proposals Traditionally considered to be from **azgd*^{h}- and compared with Skt. *sákthi-*, Av. *haxti-* 'thigh', and Gk. ἴσχιον, ἰσχίον 'hip-joint', Hsch. ἴσχι· ὀσφῦς (Meillet 1898: 277, HAB I: 86, J̌ahowkyan 1967: 217). This comparison would require an initial metathesis of vowel and **s* in both the Greek and Armenian forms, as well as irregular changes to the medial cluster (IIr. **-ktH-* does not match Gk. -χ-, nor Arm. *-d-*, even if from **-k*$^{(h)}$*d*^{h}-).[3]

Others have proposed a comparison with Gk. ὀσφῦς f. 'loin, lower part of back' (J̌ahowkyan 1987: 184, Olsen 1999: 149), which, on the other hand, has been compared to OIr. *odb* 'knot, lump', We. *oddf* 'growth, knot' < PC **osbo-* (cf. Schrijver 1995: 376).

Martirosyan (EDA 10) rejects both etymologies but prefers to maintain the comparison with Gk. ὀσφῦς by hesitantly assuming a substrate word **H*(*o*)*sdb*^{h}*u-*.

Discussion Both of the traditional comparisons involve several irregularities and must be rejected. Arm. *a* cannot have developed from **o* in this case because it appears in a closed syllable. The

[3]The comparison between the Indo-Iranian and Greek forms is now mostly rejected (GEW I: 749, EWAia II: 684). IIr. **saktHi-* can be compared to Hit. *šakuttai-* 'a body-part between the kidney and the knees' < **sok*^{w}*t*(*-h*$_2$-) (Normier *apud* Kühne 1986: 103 fn. 61, Melchert 1994: 61, Kloekhorst 2008: 703–4). Gk. ἴσχιον is identical to Alb. *vithe* 'rump of a large animal, buttocks' < **uisǵ*^{h}*io-* (Mann 1952: 39).

comparison with Gk. ὀσφῦς would only work under the assumption of a zero grade *h_3sdb^hu- for Armenian (EDA 10). However, the change of *-sdb^h- to Arm. -*zd*- has no parallels and is far from assured. The Armenian word belongs to the *r*-stem declension as opposed to the Greek word, which is a *u*-stem. The transfer from *u*-stem to *r*-stem can hardly have been influenced by Arm. *oskr* 'bone' which does not have a sufficiently similar meaning. Overall, these comparanda are neither semantically, nor formally comparable.

Conclusion No comparanda.

* * *

IV 2. *աղաւնի* *aławni* (mixed *o/ea*) 'dove' (HAB I: 122–3, Solta 1960: 117–8, Greppin 1983: 268–9, Olsen 1999: 508, EDA 29–31).

Proposals Often compared to Lat. *palumbēs*, *palumbus* 'wood pigeon, ring dove'.[4] Klingenschmitt (1982: 68 fn. 11) reconstructs *$plHb^hnih_2$ (cf. Clackson 1994: 39), which he considers a derivation of *$\sqrt{pelH}$- 'grey' (Gk. πέλεια 'dove, pigeon' and OPr. [EV] *poalis* 'dove'; cf. Lamberterie 1979: 149) with a suffix *-b^h- that appears in colour adjectives and other nominal derivations.

Martirosyan (EDA 30–1, 2013: 122) maintains the comparison between the Armenian and Latin words, reconstructing an underlying paradigm *$plh_2b^hōn$ (> Arm. **aławown*), GEN *plh_2b^hnos (> Lat. *palumbus*). He considers this etymon to be a borrowing from a Mediterranean substrate language, citing Lat. *columba* 'dove, pigeon' and Arm. *salam*(*b*) 'francolin', which potentially show the same non-IE suffix.

Discussion There is dialectal evidence for a form **aławun* or **aławin* (EDA 29–30), which strongly suggests that the suffix -*i*

[4] As asserted by Lamberterie (1979: 149), the older derivation (e.g. IEW 31) from *h_2elb^h- 'white' (Lat. *albus* 'white', Gk. ἀλφός 'dull-white leprosy') can be rejected. There is no evidence for a "disyllabic" root variant *h_2leh_3- apart from Hsch. ἀλωφούς· λευκούς, which is probably a corruption for ἀλφούς (cf. Gippert 2017: 185). Furthermore, white doves were only introduced to Europe in Antiquity so it is unlikely that doves were associated with the colour white before that time (Greppin 1978: 131–2).

was added internally in Armenian. Direct evidence for this form is only found in Kᶜesab *ätʻvun*. However, the widespread dialectal pronunciation /ałavni/ shows that the classical pronunciation was trisyllabic */aławəni/ (also, *aławni* is never spelled in the monophthongized form ***ałōni* in ClArm. texts). Thus, *aławni* can also reflect older **aławin-i* (which would make *ätʻvun* a false restoration) but not quasi-IE **plHbʰnih₂*. Starting from **aławu/in* also helps clarify the mixed paradigm seen in the Bible, where the GEN-DAT.PL is usually the expected *aławn-eacᶜ*, but the GEN-DAT.SG usually *aławn-oy* (beside the more rare *aławn-woy*).[5]

The root **√pelH-* is not attested with the suffix **-bʰ-* elsewhere, and it is likely that the use of **-bʰ-* was not permitted for roots beginning with a labial stop (Hyllested 2009: 206). Additionally, an old *n*-stem built to a **-bʰ-* adjective would be unparalleled. Therefore, the reconstruction of PIE **plH-bʰ-ōn* or **plH-bʰ-nih₂* has little support, and the connection of *aławni* with **√pelH-* 'grey' is unlikely.[6]

Despite the seemingly parallel derivations of Latin *palumbus* and *columba* 'dove, pigeon', these are words that may easily have affected each other formally, while Arm. *aławni* is formally very different. Apart from Lat. *columba* and Arm. *salamb*, evidence from Germanic and Balto-Slavic points to a cluster **-mP-* (see IV 69 *salamb*), which is absent in *aławni*.

Thus, the etymology of Arm. *aławni* remains unclear, suggesting a more recent loanword. Gippert (2017) discusses the following Lezgic words for 'pigeon': Aghwan, Tab., Aghul *luf*, Lezg. *lif*, Kryz *lif*, and Rutul *lirẋʷ*, *lirf*, for which he reconstructs Proto-Lezgic **ləẋʷ*. Gippert then proposes that this form was borrowed from PA **(ə)ləv-*, which he considers to be inherited from PIE. The assumption of a borrowing into Lezgic raises several problems, however. The substitution of PA **w* or **β* (vel sim.) by Lezgic **f* is unexpected,

[5] Martirosyan (EDA 29) assumes that *aławnoy* results from haplology (rather, dissimilation) of *aławnwoy*, but his own reconstruction **aławun* provides a more elegant explanation for it.

[6] Lamberterie (1979: 149) compares Gk. πελιτνός, πελιδνός 'livid', Skt. *páliknī* (f.) 'grey', assuming that the cluster **-tn-* yields Arm. *-wn-*, but this is far from certain and again, the reconstruction conflicts with the evidence for primary **aławun* or **aławin*. A reconstruction "**plh₂-e-uēn-i̯eh₂-*" is advocated by Ronzitti (2015: 136) who compares Skt. *párāvata-* 'turtle dove, pigeon'. However, the Sanskrit word can easily be identical to *párāvata-* in the sense 'coming from a distance; name of a tribe' (EWAia II: 122–3).

because voiced bilabial fricatives or approximants exist in all Lezgic languages. Additionally, as Gippert himself admits, the Rutul evidence suggests a Proto-Lezgic reconstruction with final *-x̣ʷ*. Even if it is true that these sounds were at some point in free variation within Lezgic, potential cognates in Dargwa, viz. Chg. *nexʷa*, Akusha *laha* 'pigeon', appear to show that the *f* is an inner-Lezgic development. If the word existed in the common ancestor of Lezgic and Dargwa, its early age precludes that it was borrowed from a prestage of Armenian.

In conclusion, if the Armenian and Daghestanian words are connected, the borrowing went from Lezgic into Armenian. To be sure, this is a relatively unproblematic assumption in view of the Armenian phonotactic restriction against initial /ɬ/ (as noted by Gippert 2017: 187). Furthermore, the phoneme /f/ was only introduced to Armenian very recently, and /x̣ʷ/ would likewise have been a foreign phoneme.[7] We can thus expect an input **ɬəf* or **ɬəx̣ʷ* to be reflected as **aław-*. The suffix *-in* would then be an inner-Armenian addition. Most likely, it represents the originally adjectival suffix **-ih₁-no-* (+ *-i*) (cf. OCS *svinъ* 'pig', Lat. *sūnus* 'porcine'). Olsen (1999: 508) reconstructs the suffix of *aławni* as **-ih₁n(i)i̯eh₂*. An older **aław-in-i* is already assumed by Karst (1901: 28).

Conclusion Possibly ← Lezgic **ləf* or **ləx̣ʷ*

* * *

IV 3. **աղուէս** *ałowēs* (*u*; oblique stem *alowes-*) 'fox' (Hübschmann 1897: 415, HAB I: 134–5, Solta 1960: 119, Greppin 1983: 272, Clackson 1994: 95–6, Olsen 1999: 187–8, EDA 42, J̌ahowkyan 2010: 39).

Proposals Compared to Gk. ἀλώπηξ (GEN.SG ἀλώπεκος) 'fox', Skt. *lopāśá-* 'fox, jackal', Li. *lãpė*, Ltv. *lapsa* 'fox'. These words are occasionally considered independent borrowings from one or more unknown languages (e.g. Beekes 1969: 40, Greppin 1983, EDA 42). Some scholars doubt the inclusion of PIIr. **(H)raupāća-* (Skt. *lopāśá-* 'fox, jackal', MP *rwp'h* 'fox', Khot. *rrūvāsa* 'jackal'), because the diphthong of the root syllable is incompatible with that of the other

[7] It can be speculated whether **x̣ʷ* could have been substituted by PA **ɣʷ* (quasi < PIE **u̯*), which later became *w* word-finally.

cognates. De Vaan (2000) argues that the IIr. suffix *-*ācá-*, appearing in several animal names, is of substrate origin.[8] The variation with *(*H*)*raupăća-* (e.g. Khwar. *rwbs* 'fox'), where both instances of **a* are short, is taken as an argument for a foreign origin of the Indo-Iranian words by Bernard (2020: 38).

Discussion As argued in Palmér et al. 2021, the near phoneme-by-phoneme match between the Indo-Iranian, Greek, and Armenian forms is too striking to be coincidental, and these forms should not be etymologically separated. The diphthong of the IIr. forms can be explained by contamination with the unrelated **raupi-* 'fox' (YAv. *raopi-*, Khowar (Dardic) *lōw* 'fox'). The variation between the suffixes *-*āća-* and *-*ać́a-* can reflect the levelling of different ablaut grades, starting from an Indo-European suffix *-*ēḱ-*, *-*eḱ-*, matching Gk. -ηκ-, -εκ-. A zero-grade of the same suffix may be seen in Ltv. *lapsa* < **h*$_2$*lop-ḱ-*. All forms can thus be explained by starting from an athematic, amphidynamic paradigm: **h*$_2$*lóp-ḱ-s*, ACC **h*$_2$*lop-éḱ-m*, GEN **h*$_2$*lp-ḱ-és* (Palmér et al. 2021: 253–6).[9]

Starting from a later paradigm with the suffix alternants *-*ēḱ-* and *-*eḱ-* (as in Greek), the synchronic alternation of Arm. *ē* and *e* can be explained by two analogical changes occuring at each end of the relative chronology of sound changes. If the suffix was first levelled in favour of the lengthened grade *-*ēḱ-*, the outcome would be a non-alternating stem **h*$_2$*lŏp-ēḱ-* > PA **ało/uwis-* (cf. the doubtful case of *ak^{c}is*, IV 15). After the fixation of the accent and the reduction of pretonic *ē* > *i*, the vocalism of the paradigm *ałəwís-*, OBL *ałəwisú-* would have underwent a hypercorrect restoration according to the usual distribution of stressed *ē*, unstressed *i*, whence the attested NOM-ACC.SG *ałowēs*. The oblique stem, where the stem-vowel *u* was maintained, would then have been subjected to Meillet's *lezow* rule, thus **ałəwisu-* > *ałowesow-* (see Palmér et al. 2021: 237 with literature).

[8] In a similar vein, Bernard (2020: 37–40) considers *(*H*)*raupăća-* to be derived from PIr. *(*H*)*raupi-*, for which he assumes an original meaning 'marten', like the related *(*H*)*rupi-* (YAv. *urupi-* 'dog-like animal with precious fur'). However, the reflexes of *(*H*)*raupi-* mean exclusively 'fox', so one would have to assume that the meaning 'fox' later spread back to **raupi-*. This scenario is not very economical.

[9] The suffix *-*eḱ-* (thematicized *-*ḱo-*) is potentially also seen in *h$_2$rt-ḱ-o-* 'bear' (Hit. *ḫartakka-*, Skt. *ṛ́kṣa-*) and perhaps **Hk-eḱ-*(*V*)- 'weasel' (Skt. *kaśa-*, Arm. *ak^{c}is*; see IV 15), but is originally an adjectival suffix, cf. Skt. *babhru-śá-* 'brown'; *yuvaśá-* 'young', Lat. *iuvencus* next to *iuvenis* 'young'.

Conclusion PIE *$h_2l\breve{o}p$-$e\acute{k}$-.

* * *

IV 4. ***այծ*** *ayc* (*i*) 'goat' (Hübschmann 1897: 417, HAB I: 169–70, Solta 1960: 405, Greppin 1983: 284, Clackson 1994: 88–90, Olsen 1999: 87, EDA 58, J̌ahowkyan 2010: 48–9).

Proposals Compared to Gk. αἴξ (GEN.SG αἰγός) 'goat' and sometimes Alb. *edh* 'kid' (< **aidza*; also Alb. *dhi* 'nanny-goat' if < **aidzijā*, Demiraj 1997: 160). Related forms in Indo-Iranian and Balto-Slavic reflect **aǵ-*, thus Skt. *ajá-* 'goat', YAv. *aza-* 'billy-goat'; Li. *ožỹs*, *ožkà* 'goat'.

Discussion The alternation of the forms **aiǵ-* (**iǵ-*) and **aǵ-* cannot possibly be explained by Proto-Indo-European rules and these two stems are best understood as different reflections of the same foreign word (Specht 1939: 13, Solta 1960: 405, EDA 58). The distribution of these forms appears to suggest an early IE dialectal division between Greek, Armenian, and perhaps Albanian versus Indo-Iranian and Balto-Slavic (Thorsø 2020: 255). However, some Iranian derivatives referring to leather and leather objects reflect **iǵ-*, i.e. the zero grade of **aiǵ-*, cf. Av. *īzaēna-* 'leathern' and Yidgha *ízë*, Mun. *əʒyo*, *yiʒia* 'goatskin bag', Pashto *zək*, *žay* 'bellows' (ÈSIJa I: 145–6). The comparison of Skt. *eḍa-* 'sheep, ewe' (EWAia I: 264) from **aiǵ-*, purportedly levelled on the basis of case forms with the ending *-bhiḥ* is doubtful.

Although the lexeme **aiǵ-* or **aǵ-* may have been subjected to IE ablaut, there is no doubt that it reflects a loanword postdating the initial disintegration of PIE. As potential donors of such a loan, it may be relevant to note Proto-Circassian **hač:a* 'billy-goat' (Adyge *āč:a*, Kab. *haža*; Kuipers 1975: 83) which assumedly had an appropriate geographic placement north(-east) of the Black Sea (Witzel 2003: 20–1). Similar Nakh-Daghestanian forms (e.g. Akuša *ʕeža*, Chg. *ʕaža* 'goat') may be treated as borrowings from Abkhaz-Adyge languages as well. Contra Witzel (2003: 21), the form **aiǵ-* was not necessarily borrowed from a different source than **aǵ-*. The formal variation may be a result of the borrowing process, thus reflecting a situation where a fragmentation of the core IE languages was already in motion.

Conclusion Non-IE *__aiǵ-__ (Gk, Arm, ?Alb, ?Ir) : *__aǵ__ (BSl, IIr). Perhaps from Abkhaz-Adyge.

* * *

iv 5. ***ա՛նթեղ*** *ant^{c}eł* 'hot coal, ember' (HAB I: 194, Greppin 1983: 290, EDA 85, J̌ahowkyan 2010: 57).

Proposals Ačaṙyan (HAB I: 194) considers this word a borrowing from a Caucasian language, akin to Ge. *ant-eba* 'to burn, light', *ant-ia* 'is lit', while he considers the resemblance with the Gk. ἄνθραξ, -ακος '(char)coal' to be fortuitous. J̌ahowkyan (1987: 157, 597) considers the Armenian and Greek forms to be cognate while treating the Georgian form as an Armenian borrowing. Vogt (1938: 333) appears to assume that both the Greek and Armenian words were borrowed from Kartvelian.

Martirosyan (EDA 85) supports a connection between all three forms and adduces Hit. *ḫandaiš* 'heat', assuming a Mediterranean substrate word. Further, he follows J̌ahowkyan (1987: 157) in proposing a connection with *ant^{c}ayr* 'spark' < **ant^{c}ari*; as well as dial. *ant^{c}roc^{c}* (also *a(n)t^{c}aroc^{c}*; HLBB I: 9) 'firestick, poker'. The latter is a typical instrument noun in *-oc^{c}*. All in all, this would point to an alternation of suffixes with **-l-* and **-r-* which finds only a few, scattered parallels.

For Gk. ἄνθραξ, Kölligan (2003) proposes a derivation from a substantivized adjective **ἄνθρος/ν* 'das Schwarze' (< **h$_2$nd^{h}-ro-*) which would be a cognate of Skt. *ándhas-* 'darkness' (< **h$_2$end^{h}-os-*) within the Caland system. He further compares Hsch. ἀνθρεῖ· κρύπτει with an extended meaning.

Discussion The proposal of Kölligan (2003) relies on unattested formations and the semantic development from 'dark, black (thing)' to 'coal' does not easily find parallels. Furthermore, it ignores the Armenian word, which offers a perfect semantic match. It remains likely that the Armenian and Greek words are connected. If correct, the correspondence of Arm. *-t^{c}-* and Gk. -θ- can only point to a voiceless aspirate **t^{h}*, suggesting that the word is non-IE.[10] If Hit. *ḫandaiš* 'heat' is connected as well, it would show that the loanword is very

[10] The suffix -ακ- also indicates that the Greek word is foreign (Beekes 2010: 105).

old, predating the loss of initial laryngeals in Armenian and Greek. On the other hand, it would also suggest that the word was borrowed in the sense 'heat', with a subsequent shared, Graeco-Armenian semantic innovation. This makes the comparison less compelling. In my view, the Hittite word is better compared with OIr. *and-* 'to kindle' which would point to a root *$\sqrt{h_2end^{(h)}}$- (Kloekhorst 2008: 291–2).

As proposed by Martirosyan (EDA 85), the parallel occurence of Arm. *ant^{c}eł* (< **ant^{h}-elC-*) with *ant^{c}ayr* 'spark' (< **ant^{h}-ari-*), *ant^{c}-r-oc^{c}* 'firestick', and Gk. ἄνθ-ρ-ακ- suggests an alternating suffix **-(V)l-* : **-(V)r-*. He compares such examples as *cand-ēl-a* 'candle',[11] Gk. αἰθ-άλ-η 'soot', and Arm. *gaz-ał* 'ash'. Unfortunately, clear evidence for both alternants of this suffix is not found within Armenian.

The Georgian root *ant-* is isolated in Kartvelian, and likely a loanword in itself, making it unlikely to be the direct donor of the Armenian and Greek words (J̌ahowkyan 1987: 597). Thus, if the word is connected to the Greek and Armenian forms at all — which is uncertain in view of the divergent meaning — it probably represents a borrowing from the same, unknown language or from an unattested Armenian verb **ant^{c}em* 'burn (?)'.

Conclusion Non-IE ***ant^{h}-** (Arm, Gk)

* * *

IV 6. ***ա՛նիծ*** *anic* 'nit, louse egg' (HAB I: 195, Solta 1960: 121–2, Greppin 1983: 290–1, EDA 86–9, J̌ahowkyan 2010: 57).

Proposals Compared to Gk. κονίς, κονίδες 'nits', Alb. (G) *thëni*, Lat. *lēns*, *lendis*; Li. *glìnda*, Ltv. *gnīda*, Ru. *gnída*; MIr. *sned*, We. *nedd*(*en*); OE *hnitu*, OHG *niz* 'nit'. Many of these forms lead to different reconstructions:

**ḱonid-* (Greek, Albanian)
**ḱnid-* (Germanic, Balto-Slavic except Lithuanian)

[11] Although a suffix *-ał-* also appears in derivatives of Arm. *xand* 'desire, affection, fury, poetic fire' such as *xand-ał-at-em* 'to move to compassion' (EDA 326), this root cannot be compared to Lat. *candeō* 'shine', Skt. *candrá-* 'glittering, shining', and We. *cann* 'brilliant', because the Armenian form leads to **kh$_2$end^{h}/t-* against **kend-* elsewhere.

**gli/end-*, phps. < **gni/end-* (Lithuanian, Latin)
**snid-* (Celtic)

The large discrepancy between the compared forms and the unanalyzable morphology of the disyllabic stem **ḱ(o)nid-* (vel sim.) has led some to assume that the etymon originates in a non-IE substrate. Beekes (1969: 290) does so under the assumption of an interchange of *k* and zero in substrate words, which may help explain the Armenian form, if from **onids*.[12] Kroonen (2012: 247) includes PGm. *hnit-* among non-IE words declined as root nouns in Proto-Germanic and identifies the element **°it* with the suffix **-i(n)d-*, also found in **arwīt-* 'pea' (see under IV 8 *aṙowoyt*).

Alternatively, de Vaan (2008: 334) suggests a reconstruction **dḱnid-* (presumably an old compound), which was subsequently dissimilated or simplified in various ways. Arm. *anic* is explained as being from **h₁nid-* < **dnid-*.

As for Arm. *anic*, the final *-c* points to an original root noun ending in **°nids*. To explain the vocalic anlaut, Kortlandt (1986: 39–40) assumes an original alternation **ḱon-*, **ḱn-*, explaining the loss of the palatal in the strong form as due to influence from the weak one. That is **ḱonic* > **ϑonic* ⇒ **onic* because of **nic* (< **ḱnids*). In a similar vein, Martirosyan (EDA 88–9) proposes the following series of developments:

**sḱonids*	>	**cᶜonic*		**cᶜonic*	⇒	**sonic*	>	**hanic*
**s(ḱ)nids*	>	**snic*	⇒	**sonic*		**sonic*	>	**hanic*

According to Martirosyan, the Proto-Armenian **h-* would then have been lost in the majority of dialects including Classical Armenian, but preserved in the eastern dialects (e.g. Łarabał *hánic*).[13]

Discussion The most important counterargument to the claim that this etymon represents a borrowing is its relatively wide distribution and especially the basic meaning of all putative cognates. If

[12] In Beekes (2010: 747), however, it is stated that the formal discrepancies are due to "folk-etymological, euphemistic or taboo changes", reverberating Frisk (GEW I: 913).

[13] It remains uncertain, however, whether this rare *h-* has any etymological value. Initial *h-* sometimes appears without any clear justification whatsoever, even in the literary language, e.g. *hoktember* ← Lat. *October*, *halowē* ← Gk. ἀλόη 'aloe'.

the word was PIE, the original root may have been *√*kneid-*, cf. Gk. κνίζω 'scratch', ON *hníta* 'poke', but this root must have contained a velar in view of Ltv. *knidêt* 'to itch'. Furthermore, the semantics are of a character that would often provoke tabooistic deformation (Solta 1960: 122). The difficulty with this assumption is that in the individual cases, it is difficult to identify the exact (e.g. folk-etymological) motivation for the deformation that these forms are assumed to have undergone.

The solution of reconstructing original **dḱnid-* is problematic. Since the change of preconsonantal **d* > **h₁* (Kortlandt 1983a) is usually assumed to be a PIE sound change, it is difficult to understand why it was not carried out in e.g. Celtic where de Vaan (2008: 334) assumes that **dnid-* gave **snid-*.

Both the explanations of Kortlandt and Martirosyan (cf. also Hamp 1983: 39) assume an original ablaut of **o* : **∅* which is unexpected if we are dealing with an original root noun. Furthermore, the assumed change of **ḱn-* > Arm. *n-* has no direct parallels, but can only be hypothesized on the basis of the change **ḱl-* > *l-*, seen in *low* 'known, heard' < **ḱluto-*.

Considering the variation across the IE languages, it is also possible that Arm. *anic* continues **H(o)nid-* (Derksen 1996: 258) or **kʷonid-*, as suggested by Pedersen (1906a: 387), assuming a regular merger of initial **kʷo-* and **po-* (cf. Olsen 1999: 806). The word proves exceedingly difficult to reconstruct for PIE. Still it is unlikely to be of substrate origin, because it has a basic meaning and exhibits sound alternations that find no parallels in other substrate words. Thus, these irregular alternations are potentially better explained as having a tabooistic motivation.

Conclusion Probably PIE. Arm. *anic* < **H(o)nid-*?

* * *

IV 7. **ա՛նուրջ** *anowrǰ* (*o*/*i*) 'dream, vision' (Hübschmann 1897: 420, HAB I: 209–10, Solta 1960: 287–8, Greppin 1983: 294–5, Olsen 1999: 96, EDA 98, J̌ahowkyan 2010: 61). In Classical Armenian, the word is plurale tantum *anowrǰkᶜ*.

Proposals Since long compared to Gk. ὄναρ, ὄνειρος 'dream' and Alb. (G) *âdërrë*, (T) *ëndërrë* 'dream'. Greppin (1983: 294–5) notes

that the word is "of extremely narrow geographical range and it is possible that it is not of Indo-European origin." Martirosyan (EDA 98) does not explicitly consider the word non-IE in his discussion, but labels the reconstruction quasi-IE and includes the word in an overview of borrowings from the so-called Mediterranean-Pontic substrate (EDA 807). Later (Martirosyan 2013: 116), however, he assumes a derivation from *$\sqrt{h_2enh_1}$- 'breathe', citing Lamberterie.[14]

Discussion The Armenian form must reflect *$Hnōr$-$i̯o$-. Olsen (1999: 96) proposes a feminine (or collective) *$Hnōr$-ih_2- as an alternative, but Armenian does not attest to an *a*-stem, which would be expected from such a formation. The lengthened grade probably originated in an archaic collective *Hn-$ṓr$- (type τέκμωρ, cf. Beekes 2010: 1082). This suggests that the word continues an old heteroclitic.

The Greek forms cannot clarify the quality of the laryngeal, as ὄναρ may reflect both *h_3en-r and *Hon-r. The reconstruction with *h_3 is attractive as it can explain the derivation ὄνειρος as directly reflecting *$h_3nér̥i̯o$- as a thematicization of the old locative *h_3n-$én$-i with -r- generalized from the strong stem (Hamp 1984). In that case, however, the initial α- of Cretan ἄναιρος (if < *h_3nr-io-, Beekes 2010: 1082) would have to be explained by assimilation. Therefore, it is also possible that Gk. ο was generalized from the strong stem *h_2on-r,[15] and that the Cretan form has etymological α- from *h_2nr- (NIL 304 with references). As suggested by ὀνείρατος (*Od.*), presumably secondary for an unattested GEN.SG *ὄνατος (Beekes 2010: 1082, Lamberterie 2013: 20), the weak stem in *-nt- was preserved in Greek. Thus, the generalization of the *r alternant and subsequent thematicization is not a Graeco-Armenian innovation (*pace* Hamp 1984).

In the Albanian forms, the geminate -rr- may be a generalization of the definite ACC.SG *$andərnə$ < *$andr$-$ənnə$ (Neri *apud* DPEWA s.v.). PAlb. *$andrā$- can reflect a collective *$H(e)nr$-$(i)eh_2$-.

[14] Lamberterie presented the etymology at the 14th Fachtagung of the Indogermanische Gesellschaft (Copenhagen, 2012), but it does not appear to have been published. See also Lamberterie (2013: 20–1), where Brugmannian reconstructions are offered. The comparison with the root *$\sqrt{h_2enh_1}$- (as well as with *h_2ner- 'man' or 'vitality') goes back to Adams (1987).

[15] Or perhaps from an *o*-grade locative *h_2on-$én$-, cf. *$su̯op$-$én$ as a possible basis for *$su̯opno$-, Arm. $k^{\text{c}}own$ 'sleep' (Schindler 1966).

Various root etymologies have been proposed (see NIL 304–6 with references) for this etymon, but they remain uncertain and require substantial semantic shifts. Formally, it is clear that the individual attestations represent refurnishings of a heteroclitic paradigm (most well-preserved in Gk. ὄναρ), making this Greek-Armenian-Albanian isogloss likely to represent an archaism (cf. Hyllested & Joseph 2022: 238). No formal or semantic features indicate that it is borrowed from a non-IE language. Beekes (2010: 1082) states that "[t]hrough the rise of ὄναρ and cognates, the meaning of old ὕπαρ ['vision', < **sup-r*] shifted." It is equally possible, however, that ὄναρ and its cognates represent an archaism, which in other languages was replaced by transparent derivations of *√*s̯uep-* 'sleep' (Schindler 1966: 75).

Conclusion PIE **Hnōr-i̯o-*.

* * *

IV 8. ***առուոյտ*** *aṙowoyt* (*i* per NBHL; vars. *arwowt*, *aṙvoyt*, *aṙoyt*, *aṙowt*, *aṙowot*, *aṙawit*, *aṙawoyt*, *aṙawōt*) 'alfalfa, *Medicago sativa* (a legume)' (HAB I: 265, J̌ahowkyan 2010: 75). Attested since the Galen Dictionary (glossing Gk. μηδική; Greppin 1985: 76) and Mxitᶜar Goš. Also found in an Arabic-Armenian botanical dictionary from the 9th century, where it glosses Arab. *ar-raṭbah* 'alfalfa; red clover' (Greppin 1996a: 393).

Proposals Dervischjan (1877: 29) compares Gk. ἐρέβινθος 'chickpea' and OHG *araweiz* (a variant of *arwīz*) 'pea'. Hiwnkᶜearpēyēntean (1894: 241) compares the Greek form only. Due to the irregular sound correspondences involved, Ačaṙyan (HAB I: 265) does not accept the etymology and offers no alternative proposals, although he cites Ge. (Kakheti, Kartli) *alaverdi* 'alfalfa' as a loan from Armenian. The word is not found in later etymological works (Solta 1960, Greppin 1983, J̌ahowkyan 1987, EDA).

Greppin (1992: 72–3) compares Semitic *√rṭb* 'fresh, green, juicy, tender', cf. Akk. *raṭābu* 'to be damp, fresh (of dates)' and Arab. *ar-raṭbah* as a gloss of *aṙowoyt*. He assumes that a derivation of this root entered Armenian through an unknown Mediterranean medium.

J̌ahowkyan (2010: 75) reconstructs PIE **orob^h-* and compares Ru. *rjabina* 'rowan', comparing the suffix *-oyt* to that of *artoyt* 'lark' (IV 12).

Discussion J̌ahowkyan's (2010: 75) comparison with Ru. *rjabina* is far from compelling. The meanings 'rowan tree' and 'alfalfa' are extremely distant. More importanly, the Slavic word must reflect **erębina* with a nasal (cf. Pol. *jarzębina* 'rowan') (Derksen 2008: 142–3); whereas the Armenian word would reflect quasi-IE **orob^h-*.

The comparison with Semitic *√ṛṭb* (Greppin 1992) is questionable as it would require a metathesis of *ṭ* and *b*. Furthermore, Arabic *ar-raṭbah* 'alfalfa' does not lend much credence to the comparison. It is semantically isolated and therefore appears to be caused by a late lexicalization of the sense 'fresh, green'. At the same time, the word would need to have been adopted in Armenian before the lenition of **b* > *w*, which, however, took place at least before the adoption of Iranian loans. Finally, the Arabic word is already the source of Arm. *ṙatpay* 'alfalfa' (HAB IV: 142).

This leaves only the old comparison by Dervischjan (1877) and Hiwnkᶜearpēyēntean (1894). The full set of comparanda includes Gk. ἐρέβινθος 'chickpea', ὄροβος 'bitter vetch'; Lat. *ervum* 'bitter vetch', and PGm. **arwīt-* (OHG *arawīz*, *araweiz*; OS *erit*, ON *ertr* etc.).[16] None of these forms can be regular cognates. Instead, they point to the following protoforms.

**ereb-ind^h-*, **orob-* (Greek)
**a/orṷ-īd-* (Germanic)
**erṷo-* (Latin)

This formal variation is best understood by assuming a non-IE loanword. Additionally, its non-IE origin is indicated by the suffix reflected by Gk. -ινθ-, which may be connected with Germanic **-īt-* (Ipsen 1924: 230–2, Nehring 1936: 137, Walde-Hofmann I: 419–20, Kuiper 1956: 217–9, GEW I: 549–50, Furnée 1972: 231, 273, Schrijver 1991: 36, Beekes 2010: 451, 1108, Kroonen 2012: 242–4, Šorgo 2020: 434). Furthermore, we can observe an alternation of root-final **b*

[16] MIr. *orbaind* (NOM.PL) 'grains' is compared by Stokes (1904: 245), Pedersen (1909: 109), Frisk (GEW I: 549–50), and others. However, it does not refer to a legume and is better considered a spelling variant of *arbainn*, which itself continues OIr. *arbor*, GEN.SG *arbe*, NOM-ACC.PL *arbanna* 'grain' < **h$_2$erh$_3$-ur*/*-uen-* (NIL 322).

∞ *u̯ which reoccurs in another clearly non-IE etymon, viz. *b^hab- (Lat. *faba*, Fal. *haba* 'bean'), *b^hab^h- (OPr. *babo*, OCS *bobъ* 'bean') vs. *b^hau̯-n- (ON *baun*, OHG *bōna* 'bean') (Kroonen 2013: 55, Šorgo 2020: 435, 460–1).

The question is if the Armenian material can be added to this complex as well. The normal variant *arowoyt* (HAB I: 265, Greppin 1985: 76) presupposes a quasi-IE form *(*V*)*rHVb^{h}oud-*. Another fact that suggests a relatively late borrowing is the presence of *ṙ* in place of *r*, which would be the regular reflex of PIE **r* in intervocalic position. The trilled *ṙ* mechanically reconstructs to a cluster *-*rH*- (or *-*sr*-, *-*rs*-), but the comparanda yields no evidence that the input form contained a cluster of this kind. We may thus assume that the borrowing was late enough that the trilled *ṙ* had already emerged as a phoneme and served as the most appropriate substitution for the particular liquid sound found in the input form.

The original vocalism cannot be determined with certainty, but a few observations are in order. As for the second vowel (which has been lenited in the pretonic position and is hidden in the grapheme ‹ow› = /əw/; see Kim 2021) the only option that can be outright rejected is short **e*. An original **a* may be reflected in the rarer form *aṙawoyt*, but this might as well result from later assimilation. Since there is no external evidence for *ē, *ō, **i*, or **u*, the most attractive option is **o*, leading to a reconstruction *(*V*)*ṙoβ*-. If we accept the change of **o* > *a* in an initial, open syllable, which took place only after the loss of pretonic **i* and **u* (Pedersen 1900: 99, Grammont 1918: 223–5), we may assume that the initial vowel was **o*. We thus arrive at a preform **oṙob^h-oud-*, which comes close to Gk. ὄροβος 'bitter vetch'.[17] We cannot be certain whether the initial vowel was present in the input form or is the result of the regular vowel prothesis that affects initial **r*- and **ṙ*- in inherited words as well as many loanwords (e.g. *aṙat* 'liberal, generous, abundant' ← Pth. *rād* 'id.'). In Greek ἐρέβινθος, the initial vowel may also be the result of secondary prothesis, but the Germanic and Latin evidence point to donor forms with an initial vowel, making this more likely for the input of the Armenian form.

[17] In this case, it is interesting to note the correlation with the somewhat different meanings of ὄροβος and *aṙowoyt*. Bitter vetch and alfalfa are both legumes primarily used for the feeding of ruminant animals, as opposed to (chick)peas widely consumed by humans.

Conclusion Non-IE ***oi̯obʰ-oud-** (Arm) : ***ereb-indʰ-** : ***orob-** (Gk) : **erṷ-** (It) : **orṷ-īd-** (Gmc)

* * *

iv 9. ***արատայ*** *aratay* (HAB I: 298, 316 s.v. *ariovd*; EDA 126–8, J̌ahowkyan 2010: 85).

Semantics Hapax legomenon in a commentary on *Psalms* 104.17 by Vardan Arawelcʿi. It has no established meaning. The relevant Hebrew, Greek, and Armenian passages of Psalms read:

> *ḥasîḏāh bərōšîm bêṯāh*
> the stork, the fir trees [are] its home
>
> τοῦ ἐρωδιοῦ ἡ οἰκία ἡγεῖται αὐτῶν
> the home of the heron leads them [i.e. is already there]
>
> ***բոյն արագլի ապաւէն է նոցա***
> the stork's nest (*boyn aragli*) is their retreat

The Armenian translation is clearly closer to the Septuagint in that it does not translate 'fir trees'. Vardan then comments this passage in the following way:

> ***բոյն արագլի, Սիմաքոս՝ արիովդ արատայ տուն է նորա***
> *boyn aragli*: Symmachus; *ariovd aratay* is its home

Martirosyan (EDA 126–7) provides an elaborate discussion and further references on the attestation. Ačaṙyan (HAB I: 316) assumes that *ariovd* can be equated with Heb. *bərōš* 'cypress, fir', in which case *aratay* means 'stork'. However, the assumption that *aratay* is a GEN.SG of *arat** is problematic because the genitive ending *-ay* is usually confined to proper nouns. Additionally, the meaning of *ariovd* cannot be established either. Martirosyan (EDA 127) proposes that this *ariovd* is a corrupted transliteration of **ἀρῴδιος 'heron'.[18] This interpretation results in the passage *ariovd aratay town ē nora* lining up with the word order of the Hebrew passage, where *aratay*

[18] That is, the expected rendering of ἀρωδιός would be ***arovd*, but the iota subscriptum of ἐρῴδιος was transfered and inserted in the wrong place.

would then represent not an aberrant GEN.SG, but a NOM.SG or LOC.SG of an otherwise unknown tree name (cypress, fir or juniper). All this remains uncertain, however, as reliable comparanda are lacking internally in Armenian as well as externally.

Proposals Under the assumption that *arat** means 'stork', J̌ahowkyan (1987: 113 with "?") compares Gk. ἐρῳδιος, ἀρωδιός, ῥωδιός; Lat. *ardea* 'heron', SCr. *róda* 'stork' and ON *arta*) 'teal, garganey' (cf. Sw. *årta* 'garganey', OE *earte* 'pied wagtail' < PGm. **artō*(*n*)-) and reconstructs **arəd-* in accordance with IEW 68. Wittmann (1964) adds Hit. *arta-* 'a kind of bird' to this complex.

The alternation of Gk. ρωδ° < **rōd-* and Lat. *ard*° < **a-rd-*, PGm. **artō*(*n*)-, has been seen as an example of the Europe prefix **a-* (Kroonen 2013: 36, Iversen & Kroonen 2017: 518, Matasović 2020: 339).[19] The non-IE origin of the etymon can also be supported by the irregular SCr. *róda* which fails to show Winter's Law and must reflect *(*H*)*rod*^{h}-. Martirosyan (EDA 128) reconstructs **h*$_1$*reh*$_2$*d-* and notes that the geographical distribution (without Germanic, Slavic, and Anatolian) points to a Mediterranean donor language, but without noting the possibility that the word contains the prefix **a-*. Matasović (2020: 339) notes the limited distribution of the Slavic word and is inclined to take it as a borrowing from Greek via Romance, however. Like Schrijver (1991: 65) and Beekes (2000: 27), he is also sceptical about including the semantically distant Germanic forms. Noting the uncertain meaning of Arm. *arat*, he further speculates on a relationship with *aragil* 'stork'.

Discussion All etymological discussion of the Armenian word rests on a highly hypothetical basis since the meaning of the word is essentially unknown. Taking the alternation **rōd-* : **a-rd-* of the Greek and Latin forms into account, the Armenian form fits neither reconstruction. As noted by Martirosyan (EDA 128), it should reflect quasi-IE **h*$_1$*reh*$_2$*d-*. Under the assumption of a non-IE origin, however, it would be possible to assume a non-laryngealistic input

[19] Lat. *ard*° might go back to **h*$_1$*rd-* (Schrijver 1991: 65) but this cannot explain the Greek variant ἀρωδιός.

form **a-rəd-*.[20] The obscure GEN.SG form in *-ay* remains problematic, however.

Schrijver, Matasović, and Martirosyan (i.a.) are rightly sceptical about the inclusion of other comparanda than the Greek and Latin words for 'heron'. The Slavic comparandum is uncertain because it is limited to Serbo-Croatian. Despite the semantic difference, the reflexes of Germanic **artō(n)-* still refer to different kinds of water-birds, and it is therefore a more promising comparandum.[21] Hit. *arta-* and Arm. *aratay* must both be kept aside given their unknown meanings.

Conclusion No comparanda. The meaning is unknown.

* * *

IV 10. *արգաւտ* *argat* 'superfluous branches cut from a vine plant' (HAB I: 304, Greppin 1983: 309, EDA 132–3, J̌ahowkyan 2010: 87). Found as a Middle Armenian word in Norayr 1118, s.v. *sarment* and in the Ararat and Muš dialects (see EDA with references).

Proposals Ałayan (1974: 30) and Martirosyan (EDA 132–3) assume a derivation from **√u̯reh$_2$d-*, comparing Gk. ῥᾰ́διξ, -ῑκος 'branch, twig', Lat. *rādīx* 'root', ON *rót*, We. *gwreid* (< **u̯rh$_2$d-io-*), Go. *waurts* 'root' (< **u̯r(H)d-i-*) and Alb. (G) *rrã(n)jë* (< **u̯rh$_2$d-nieh$_2$*) 'root'. The only other example of the change **u̯r-* > *Vrg-* is *ergic-anem* 'tear, bite' < **u̯reid-* (OS *wrītan* 'tear, write'). Martirosyan assumes this to be a Mediterranean-European substrate word without argumentation.

Beekes (2010: 1271, 1285), who does not compare Arm. *argat*, also assumes a non-IE origin of these forms because the "vocalisms are not reconcilable" with that of Gk. ῥίζα, Aeol. βρίζα, βρίσδα, Myc. *wi-ri-za* 'root' < **u̯rid-ih$_2$*. The same vocalism is reconstructed for OIr. *frén* 'root' < **u̯rid-neh$_2$-*, MWe. *gwrysc* 'branch' **u̯rid-skV-* (Schrijver 1995: 173–5, Zair 2012: 75 n. 22). This could theoretically be the reflex of **u̯r̥d-*, but there is no satisfactory explanation for the loss of the laryngeal (cf. Matasović 2009: 430).

[20] While initial *ė-* in the Greek forms may easily represent a secondary prothetic vowel, Arm. *a-* would have to belong to the input form because the prothetic vowel usually has the quality *e-* unless the root contains a labial vowel (EDA 716–7).

[21] The semantic shift from 'heron' to 'teal' (vel sim.) might have been motivated by the fact that herons are not found naturally on the Scandinavian peninsula.

Discussion As asserted by Martirosyan, the etymology of Ałayan is preferable to earlier attempts, which involve unattested roots or unclear semantic developments (see EDA 132 with references). The semantic change of 'root' > 'branch' is straightforward and paralleled by the cognates Gk. ῥάδιξ and MWe. *gwrysc*.[22]

Apart from the chiefly European distribution of *√u̯reh$_2$d- (It, Celt, Gk, Gmc, Arm, Alb)[23], the main argument for a non-IE origin of this etymon comes from the irregular alternation with the homosemous root *√u̯r(e)id-. In previous scholarship, one has assumed a morphological relationship between these two roots, in particular under the assumption of a Greek *schwa secundum* that arose in oblique forms with secondary ("morphological") zero grade *u̯rdi̯- (see Vine 1999 with references). However, no parallels can be produced for the assumption of a Pre-Proto-Gk. paradigm *u̯rādi̯a, *u̯ridi̯-. Additionally, this scenario does not solve the problem of the Celtic forms, OIr. *frén* and MWe. *gwrysc*, which need a separate explanation (cf. Vine 1999: 6–9). This means that we are forced to be content with assuming a co-existence of PIE *u̯reh$_2$d- and *u̯r(e)id-, at least at a later stage of the protolanguage.

Conclusion PIE *u̯reh$_2$d-.

* * *

IV 11. ***արտեւան*** *artewan* (*-ownk^c*, *-anc^c* or *-ac^c*) '(PL) eyelash, eyebrow; (SG) brow of a mountain, summit' (HAB I: 343, Greppin 1983: 317, Clackson 1994: 109–12, Olsen 1999: 296–7, J̌ahowkyan 2010: 96). On the semantics, see Lamberterie 1983, Martirosyan 2013: 113–4.

Proposals Compared to Gk. δρεπάνη, δρέπανον 'sickle' (Lamberterie 1983, Clackson 1994: 109–12, Olsen & Thorsø 2022:

[22] Although the form *argat* is attested late, it may have existed early enough to influence the form *armat* (*o*) 'root' (Bible) that occurs beside *arm*(*n*) (*-in*) 'id.' < *$h_3$rmh$_1$no-, cf. Gk. ὄρμενος 'shoot, stalk' (cf. Olsen 1999: 337, who cites √*u̯reh$_2$d- but not *argat*).

[23] ToB *witsako* 'root' (EDA 133, Friedrich & Adams *apud* EIEC 80) is unrelated (see Adams 2013: 658) and perhaps a loanword from the same source as Iranian forms like Oss. (I) *widag* 'root', Pashto *wuláy* 'root(-fibre'), Sogd. *wyt'k* 'string' (Bernard 2023: 222–7).

213–4). Martirosyan (2013: 113–4) includes it in a list of words isolated in Greek and Armenian, which he assumes to be borrowings from an unknown language.

Discussion Although the details of the derivation are debatable (cf. Clackson 1994: 110–2), the root is clearly *√*drep-* 'cut, tear off', cf. Gk. δρέπω 'pluck, cull', SCr. *dr̂pnuti* 'rip, tear' (LIV² 128). The Greek and Armenian forms may continue a common preform **drep-n̥-eh₂-* from a verbal abstract **drép-mn* 'plucking, tearing', cf. Hsch. δρέμμα· κλέμμα (Olsen & Thorsø 2022: 213–4). In any case, there is no reason to assume a loanword.[24] Usually, the semantic shift to 'eyelash, eyebrow' is assumed to start from 'sickle' (following Lamberterie 1983). It is conceivable, however, that this sense developed directly from 'pluck' vel sim. (cf. already J̌ahowkyan 1973b: 17).

Conclusion PIE *√*drep-*.

* * *

iv 12. ***արտոյտ*** *artoyt* (vars. *-owt*, *-iwt*, *-ōt*) 'lark, skylark' (HAB I: 343–4, Greppin 1983: 317, J̌ahowkyan 2010: 96–7).

Proposals In older literature and folk etymology, often considered a derivative of *art* 'field, arable land' (see HAB I: 344 with references). Based on this assumption, Patrubány (1908–1909) proposes a compound **art-awt* with an otherwise unattested **awt*, which he compares to Gk. αὐδή 'voice, speech'. This would make the common variant *artoyt* analogical after the variant *artōt*.

Łapᶜancᶜyan (1961: 359) compares Lat. *turdus*, Li. *strãzdas*, Ru. *drozd*, ON *þrǫstr* (< **þrastu-*), and OIr. *truit* 'thrush, blackbird' (see also J̌ahowkyan 1967: 151, 2010).

[24] Clackson (1994: 112) hesitantly proposes that the Armenian word is borrowed from Greek. This is an unnecessary assumption, which implies that the borrowing took place before the Armenian sound shift, the metathesis and the lenition of intervocalic stops. Such an early loan from Greek is completely unparalleled.

Discussion A composition with a word for 'voice' or 'song' is semantically sound since the lark is known for its sophisticated song (cf. Greppin 1978: 176). Still, it is built on the assumption of an unattested word. The variant *artawt* (i.e. *artōt*) is marginal and unlikely to be the source of the other variants. On the whole, the derivation from *art* 'field' remains arbitrary and can be considered folketymological (J̌ahowkyan 2010: 97).

The alternative comparison with the European forms for 'thrush' is impossible under regular sound laws. While **trosdo-* would yield Arm. ***arost*, **trsdo-* would probably yield ***tcaṙt*.[25]

Rather, Arm. *artoyt* must reflect **droud-*.[26] This form more closely resembles Gk. στροῦθος, στρουθός 'sparrow; ostrich; flounder' < **stroudʰ-o-*. The Hesychian gloss στροῦς· ὁ στρουθὸς καὶ ὄσπριον (sparrow/ostrich and pulse) appears to be a root noun, which indicates that the input form ended in a consonant, but the Armenian form must have been transferred to a vocalic class early, since otherwise, we would expect final **-ds* to appear as ***-c*. Although the Greek and Armenian forms are not identical, they are formally and semantically so similar that we may assume independent borrowings from a third source.[27]

The European words for 'thrush' are usually traced to **trosd-* (IEW 1096 **trozdos-*; Greppin *apud* EIEC 582; Hamp 1981: 81 *(*s*)*drosdʰ-*), but there are several irregularities between the comparanda, rendering it unlikely that the etymon is inherited.

[25] There are no certain examples showing the outcome of the cluster **-rsd-* or **-rst-*. If, as proposed by Martirosyan (EDA 498–9), Arm. *owṙtc** 'rain (?)' (presumably the derivational base of *y-owṙtci* 'irrigated, fertile' and *owṙtcem* 'fertilize') can reflect **hᵢurs-ti-* (cf. Skt. *vr̥ṣṭí* 'rain'), it shows that the development **rs* > **ṙ* also took place before a stop, but only after blocking the sonorization **Rt* > *Rd*. The regular outcome of **-sd-* is **-st-* (cf. *nist* 'seat' < **ni-sd-o-*), suggesting that any opposition with the voiced allophone **z* was neutralized, so that **-rsd-* would yield **-ṙt-*. For the same reason, Arm. *tordik* 'thrush' (cited by Hamp 1981, de Vaan 2008: 637, Matasović 2009: 392, 2020: 335 i.a.), which would presuppose **torsdʰ-*, cannot be directly cognate with the other words for 'thrush'. It is important to note that there are no reliable ClArm. attestations of this word. It is found once in a 19th c. edition of Philo, where Ačaṙyan (HAB IV: 422) suspects it to have been added by the editor, who was based in Venice. Therefore, the word can be a recent borrowing from It. *tordo*, furnished with the highly productive diminutive suffix *-ik* (Vahagn Petrosyan p.c.).

[26] Reconstructions with initial **tr-* and medial **t* (J̌ahowkyan 2010: 97) are impossible, since in these positions, **t* is subject to lenition, not metathesis.

[27] This may be corroborated by a variant with a voiced onset and no initial **s-*, attested in the personal name (GEN.SG) Δρούθου (Furnée 1972: 182), but this is obviously not the most reliable evidence.

First, Lat. *turdus* must reflect either **torsd$^{(h)}$o-*, which would result from an irregular metathesis, or **trsd$^{(h)}$o-* (de Vaan 2008: 634–5) with a zero grade that is unexpected for an *o*-stem. Second, while ON *þrǫstr* can reflect PGm. **þrastu-* < **trosd-*, the West Germanic forms OHG *thrŏsca, drŏsca* and OE *þrysce* must reflect **þrusk(j)ōn-* < **trus(T)-(s)k-* with an unexpected *u*-vocalism (Kroonen 2013: 545). Finally, all Slavic forms show an irregular initial **d-*.[28] These formal issues, coupled with the distribution of the etymon European branches and Armenian) suggest that it has a non-IE origin (cf. Matasović 2009: 392, 2020: 335). We are thus faced with two main groups of non-IE terms denoting passerine birds. One group contains a sibilant, while the other does not. The quasi-IE input analysis is presented below. Note especially that the observed alternation **-VC- ∞ *-VsC-* has a potential parallel in the word for 'barley' **g^{h}riT- : *g^{h}ersd-* (IV 22), supporting the idea that these are words of non-IE origin.

(I)	**droud-*	Arm. *artoyt* 'lark'
	**stroud^{h}-*	Gk. στροῦθος, στρουθός, στροῦς 'sparrow'
(II)	**trosd-*	ON *þrǫstr*, OE *þræsce*;
		OIr. *truit, truid* 'thrush' (or < **trusd-*)
	**tresd$^{(h)}$-*	OPr. (EV) *tresde* 'thrush'
	**strosd$^{(h)}$-*	Li. *strãzdas*, Ltv. *strazds* 'thrush, blackbird, starling'
	**drosd$^{(h)}$-*	Ru. *drozd*, SCr. *drôzd* 'thrush'
	**trusd-*	OHG *thrŏsca, drŏsca* (or < **trau°*),
		OE *þrysce* 'thrush' (**þruskjōn*)
	**t(o)rsd$^{(h)}$-*	Lat. *turdus* 'thrush'

Conclusion Non-IE ***droud-*** (Arm) : ***stroud^{h}-*** (Gk) : ***TrVsd$^{(h)}$-*** (BSl, Gmc, It).

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[28] The parallel of OCS *nozdri* and Li. *nas(t)raĩ* 'nostrils', given by Smoczyński (2018: 1308 fn. 505), is not suitable because it goes back to **nas-ra-* with an epenthetic dental (Smoczyński 2018: 843). Assuming assimilation (Vasmer I: 372) is an *ad hoc* solution without clear parallels.

IV 13. ***աւազ*** *awaz* (*o*) 'sand, gravel' (HAB I: 351, Greppin 1983: 317–8, Olsen 1999: 24, EDA 149–50, J̌ahowkyan 2010: 98).

Proposals Compared to Gk. ἄμαθος, ἄμμος, ψάμμος, ψάμαθος; Lat. *sabulum*; OHG *sant*, MHG *sampt* 'sand' (Bugge 1890: 79, 1893: 38; HAB I: 351). Bugge assumes that intervocalic *-*w*- can result from *-*m*- (similarily Normier 1980: 19), but *-*m*- is usually preserved after *a* (see Olsen 1999: 792–3). Ačaṙyan (HAB I: 351) notes that Arm. *aw*° must go back to a root *√*sab*^{h}- which can match that of Lat. *sabulum*. It is traditionally assumed that *-*z*- can continue intervocalic *-*d*^{h}-, leading to a reconstruction **sab*^{h}*ad*^{h}*o*-. Olsen (1999: 24) considers this form a contamination between two distinct stems **samad*^{h}*o*-, reflected in Gk. ἄμαθος, and **b*^{h}*sab*^{h}- as in Lat. *sabulum*, Gk. ψάμμος (similarily GEW I: 84).

Traditionally, the root has been identified with *√*b*^{h}*es*- 'grind, scatter', which would only be directly attested as a verbal root in Skt. √*bhas*- 'chew' (Boisacq 1916: 1074, IEW 145–6). On the surface, however, the evidence points to two roots: *(*p*)*sam*- and **sab*^{h}-. Together with the presence of an apparent suffix *-*d*^{h}-, this alternation is now commonly taken as a sign of non-IE origin (Deroy 1956: 183–4, Kuiper 1956: 218, 1995: 67, DELG 69, Furnée 1972: 209, Schrijver 1991: 103, Beekes *apud* EIEC 499, Beekes 2000: 26, 2010: 79–80, Kroonen 2013: 425–6). Curiously, Arm. *awaz* is rarely mentioned in the context of a non-IE loanword, only by those who consider the etymon to be inherited.

Garnier (2006: 89–90) does not accept the Armenian change of intervocalic *-*d*^{h}- > -*z*- and proposes that *awaz* is a compound of an older **aw* 'sand', matching Lat. *sab*°, and an adjective **az* 'dry' which underlies *azazem* 'to dry, tarnish'. He attempts an explanation of the entire set of comparanda based on PIE morphology. For Gk. ψάμαθος, he reconstructs **b*^{h}*sm-h*$_2$*-d*^{h}*h*$_1$*-ó*- 'pulvérisé, mis en poudre', next to ἄμμος < **sab*^{h}*-mo*- and Lat. *sabulum* < **sab*^{h}*-lo*- which he assumes to go back to **b*^{h}*s-h*$_2$*-b*^{h}*uH-ó*-. For PGm. **samda*-, he assumes that an older ***sumda*- < **b*^{h}*smh*$_2$*d*^{h}*h*$_1$*o*- was analogically replaced on the pattern of **malma*- : **mulma*- (OE *mealm* 'sand, chalk').

Others who reject the Armenian change *-*d*^{h}- > -*z*- cast doubt on the etymology of the Armenian word altogether (Greppin 1983: 317–8, Martzloff 2015–2016: esp. 129–35). Martirosyan (EDA 150) considers it to be a borrowing from a Middle Iranian form cognate

with Sogd. (Man.) *ʾwzyy* 'lake, pond' and NP *āvāzah* 'swamp', which is also reflected in Arm. *awazan* 'basin, pool'.

Discussion For the Armenian form, reconstructing quasi-IE **sab^{h}ad^{h}-o-* would yield the correct outcome only if the reflex of intervocalic **-d^{h}-* is *-z-*. This is a problematic assumption, as shown by initially Jasanoff (1979: 144–6) and most recently Martzloff (2015–2016: 129–35), who instead assume a reflex *-r-*, which is better supported.[29] For this reason, I would propose to start from an original root noun **sab^{h}ad^{h}-s*, which would initially yield NOM **awaj*, OBL **awað-V-*.[30] The thematic vowel **-o-* would subsequently have been generalized in the paradigm and the consonant **-j* spread throughout the paradigm, ultimately yielding *-z-* in intervocalic position, cf. *ozni* 'hedgehog' < **ojini* < **h$_{1}$oǵ^{h}iHn-io-*, cf. Gk. ἐχῖνος, Phr. εζις 'hedgehog'.

Despite the formal disagreement between the Greek, Italic, Germanic, and Armenian words, they are semantically and formally so similar that it would be unattractive to separate them. Moreover, alternative etymologies have failed to convince. The idea that the Armenian word was borrowed from Iranian (EDA 149–50) requires a semantic shift from 'swamp' or 'lake', which is implausible. Neither have attempts at explaining each of these individual formations with reference to Indo-European morphology been successful. The most elaborate of such attempts (Garnier 2006) still requires one to assume that several independent derivations and compounds all converged upon the meaning 'sand'. Additionally, it is completely unclear why in ἄμμος and ἄμαθος, an initial cluster **b^{h}s-* would be simplified at a very early time, while the initial stop would be preserved the in the forms with ψ-.

Consequently, the many discrepancies between the attested forms must be taken as a sign that the this is a non-IE word adopted independently in the different branches. In Greek, we must assume that the word was adopted (at least) twice: once before the loss of inherited **s-*, thus yielding ἄμμος, ἄμαθος, and

[29] Note also that this reflex would be identical to the outcome of Middle Iranian **-δ-* in loanwords, e.g. *aroyr* 'brass, bronze' ← **rauδi-*; *hamboyr* 'kiss' ← **ham-bauδi-*, *marax* 'locust' ← *maδaka-*.

[30] The change **-d^{h}s-* > **-j-*, for which no direct evidence exists, may be assumed on structural grounds (**-ts-* > *-c^{c}-* and **-ds-* > **-c-*), see Kocharov 2019: 37–8 with references.

a second time where the initial sibilant was instead reflected as ψ-, producing ψάμμος, ψάμαθος. It is not fully certain which, if not all, variants existed initially (cf. Beekes 2000: 26). The Greek suffix variant -αθ- may reflect *-n̥d^h-, as if a "zero grade" alternant of the suffix -ινθ-/-υνθ- appearing in other words of foreign origin. Assuming that ψάμμος represents a later borrowing, it would show an assimilation of *$samnd^h$- > *samm*- in the donor language, which renders it probable that the variants ἄμμος and ψάμαθος are results of later analogical crossing of the primary variants ἄμαθος and ψάμμος. On the other hand, Arm. *awaz* cannot reflect *$sab^hn̥d^h$-*o*-, which would yield **awand*. For this reason, the reconstruction of the suffix variant *-n̥d^h- in Greek is less certain, at least in this lexeme. The Germanic forms are remarkable as most forms underwent assimilation to **sanda*- (ON *sandr*, OHG *sant*), but MHG *sampt* must go back to **samda*-. Taken at face value, this means that the Germanic forms cannot continue *$samd^ho$-. We might reconstruct *sam-nd^h-*o*-, assuming a change *-mnd^h- > *-md^h-. Since the result is not **$samn̥d^ho$- > **samunda*-, however, this would mean that the usual syllabification rules of PIE did not operate at the time of borrowing. The quasi-IE input forms can be summarized as follows.

(I)	*sam-*a*-d^h-	Gk. ἄμαθος
(base *sam-)	*$samm$-(*a*)d^h-	Gmc. **samda*-
(II)	*sab^h-*l*- (or *sad^h-*l*-)	Lat. *sabulum*
(base *sab^h-)	*sab^had^h-	Arm. *awaz*
	*(*p*)sab^h-*m*- (?)	Gk. ψάμμος

Given the foreign origin of this etymon, it is relevant to note some similar forms in the West Caucasian languages. On the one hand, there is a perfect semantic correspondence with Adg. (Bezhedukh) *pš*(^{h})*āx*^{w}*a*, Ub. *pšax*^{w}*a*, Abaza *pčaq*^{w}*a* 'sand', Ab. *pšaħ*^{w}*a* 'shore' (< PWC *$pč/šaH^wa$; Chirikba 1996: 392). On the other hand, Ab./Abaza *saba*, *Adg sapə*, Kab. *sabə* 'dust' (cf. J̌ahowkyan 1987: 601) are perhaps a better phonetic fit, but requires an (albeit more trivial) semantic shift. Because a suffix matching *-ad^h- or *-nd^h- cannot be identified in West Caucasian, we cannot assume that these languages were the donor, but given the fact that the etymon is widely distributed within PIE, meaning that it was probably borrowed relatively soon after the dissolution of the Core IE

languages, it is conceivable that the WC languages borrowed these forms from a related source.

Conclusion Non-IE *$\mathbf{sab^h}$- (Arm, It) : ***sam**- (Gk, Gmc)

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IV 14. ***աւձիք*** *awji-k^c* (*ea*) 'collar' (HAB IV: 612, Solta 1960: 409, Greppin 1983: 320–1, Clackson 1994: 107–9, Olsen 1999: 498, EDA 153–4).

Proposals Compared with Gk. αὐχήν, -ένος 'neck, throat', Aeol. ἄμφην, -ενος 'neck'. If, as usually assumed, the Armenian form reflects *$h_2\underline{u}ng^{wh}$-, showing the *awcanem*-rule (Klingenschmitt 1982: 181–2), the only direct match is the Aeolic form, but its cognacy with the Armenian and Attic forms has been questioned (Clackson 1994: 107–9). Martirosyan (EDA 154) proposes that the Armenian and Attic forms reflect a substrate root *$h_2\underline{u}\bar{e}g^h$-, *$h_2ug^h$-, to which he also connects Arm. *viz* 'neck' and dial. **xiz*, **xuz* 'id.', which would represent borrowings of the same etymon via unknown intermediaries.

Discussion The development *h_2ug^h- > *awj° requires an unexpected syllabification, so if the Armenian and Attic forms are really non-IE, they are probably better reconstructed as *aug^h-, which makes it even harder to connect the forms *viz* and **xiz*. On the whole, the comparison with these forms is speculative as it requires borrowing through hypothetical languages. Moreover, the separation of the Attic and Aeolic forms is not attractive since they have identical meanings and contain the same ablauting suffix -ην/-εν-. The only formal discrepancy can be overcome by assuming an assimilation *$amk^{wh}\bar{e}n$ > *$awk^{wh}\bar{e}n$ outside Aeolic (Pronk 2010: 60). In this way, we may maintain the old connection with the adjective PIE *h_2eNg^h-*u*- 'narrow' (Skt. *aṁhú-*, Go. *aggwus*, OCS *ǫzъkъ*, Arm. *anjowk^c*), probably derived from the verbal root *$\sqrt{h_2emg^h}$- 'tie (up), constrict' (Hit. *ḫama(n)k-*, *hami(n)k-* 'tie, connect', Gk. ἄγχω 'squeeze'; see LIV^2 264).

Conclusion PIE *$h_2ng^{wh}ih_2$- < *$h_2mǵ^hu$-ih_2.

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IV 15. ակիս *ak^{c}is* (*o*) 'weasel' (HAB I: 370, EDA 159–62, J̌ahowkyan 2010: 106–7).

Attested in the Bible as part of the compound *mkn-ak^{c}is* 'shrewmouse'. The oldest attestion of the simplex is in the Armenian *Physiologus* (Muradyan 2005: 128), where it appears in the GEN.SG *z-ak^{c}soy*, translating Gk. γαλῆ, which matches the gloss in the Galen Dictionary, γαλέη (Greppin 1985: 29). The meaning is therefore clearly 'weasel' and the *o*-stem is presumably older than the *i*-stem found in Chrysostom (cf. EDA 159).

Proposals Martirosyan (EDA 159–62) compares Skt. *káśa-* (m.), *kaśī-kā́-* (f.) 'weasel' and reconstructs a lengthened grade formation *$Hkēḱ$-(ih_2-) for Armenian and full grade *$Hkeḱ$-(ih_2-) for Indic. He assumes that the lengthened grade originated in a monosyllabic root noun *$Hkēḱs$. However, he still considers the etymon to be a possible borrowing from an unknown donor (cf. also Martirosyan 2013: 102). He compares the element *$ḱ$ to other potential examples of an element *$ḱ$ or *$ǵ^h$ (> Arm. *s* or *j*/*z*) in the animal names *ałowēs* 'fox', *lows-an** 'lynx', *inj* 'panther' (IV 38), *kowz* 'cat', *mołēz* 'lizard', and *xlēz* 'lizard'.

Martirosyan (EDA 16, 161) also adduces *axaz* 'ermine, white weasel' (following J̌ahowkyan 1967: 307). This word is first attested in the *Owłegrowt^{c}iwn* by the Armenian-Polish author Simēon Lehac^{c}i (1636) and in the Latin–Armenian dictionary of Simēon's son, Step^{c}anos Ṙošk^{c}a. Martirosyan explains it as a contamination of *ak^{c}is* and **xaz*, borrowed from NP *xaz* 'marten'. At the same time, however, it is suggested that the form *axaz* may reflect a "lost form" of a hypothetical *$Hk^hVḱ/ǵ^h$- in "some IE or non-IE language of the Balkans or Asia Minor or Eastern Europe". Finally, this form, but with an elusive suffix **-Vm* is compared to MP *kākom* 'stoat' (*kākom ī spēd* 'ermine'), assumed to be a borrowing through a lost IE *centum* language, and further to Arm. dial. (Svedia) *č^{c}ässɛum* (as if < **č^{c}asowm*) 'blind mole rat' which is assumed to be the regular Middle Iranian reflex of *(*H*)*keḱ-Vm* (EDA 545–6).

Discussion The reconstruction **Hkēḱ-(o)-* for Armenian is phonologically unproblematic. Martirosyan considers the lack of secondary palatalization (*akᶜis* instead of ***ačᶜis*) to be unexpected and assumes dissimilation (Martirosyan 2013: 102). However, no examples of palatalization of PIE **ḱ* are found (cf. e.g. *kᶜerem* 'scratch' < *√(*s*)*ker-*), so it is most economical to regard non-palatalization as regular. The direct comparison between the *i*-stem (GEN-DAT-ABL.PL *y-akᶜsicᶜ* in Chrysostom) and Skt. *kaś-ī** is doubtful, however. The oldest attestation of *akᶜis* is an *o*-stem which is unlikely to be secondary, and **-ih₂* would regularly yield **-i̯a* in Armenian.

It is superficially attractive to compare the morphololgy of **Hkēḱ-* to *ałowēs*, GEN.SG *ałowesow* 'fox' which can represent a levelling from **ałowis-* (< **h₂lŏp-ēḱ-*, see IV 3). This would entail a root **√Hek-*. However, no independent evidence can be furnished for such a root, and clearly the parallel is not perfect, since the root would be in the zero grade. A very serious problem is the lack of palatalization in the Sanskrit form – one would expect ***caśa-* from **Hkeḱ-(o)-*. This problem cannot be overcome by reconstructing the suffix as **-oḱ-*, since this would lead to Brugmann's Law, and an *o*-grade of the **ḱ* suffix is found nowhere. The last resort is therefore to assume an *ad hoc* dissimilation of PIIr. ***ćeśo-* > **keśo-* (or evasion of palatalization), but this is unsatisfactory.

The word *axaz* 'white weasel' is only found in the works of Armenian authors from Poland, not in any extant dialects (HAB I: 96, HLBB *vacat*), where the usual word for 'ermine' is *kngowm*. For that reason, we can assume that the word was limited to the Transylvanian Armenian dialect (Aṙtial). It is thus likely borrowed from a Kipchak language, cf. Karachay-Balkar *aǧas* 'ermine, weasel', Tatar *aqas* 'ermine', Armeno-Kipchak *axas* (Vahagn Petrosyan p.c.).

In sum, the word *akᶜis* can reflect **Hkēḱ-o-*, but it has no certain comparanda. If the word indeed reflects a formation with the suffix **-eḱ-*, it suggests that it is relatively archaic and not borrowed from a non-IE language. The indirect relation with MP *kākom* 'stoat' and Svedia *čᶜässɛum* 'blind mole rat' is therefore impossible to confirm.

Conclusion Uncertain.

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IV 16. ***բլուր*** *blowr* (*o*) 'hill' (HAB I: 455–6, Solta 1960: 137–9, Olsen 1999: 33, EDA 178, J̌ahowkyan 2010: 130).

Proposals Usually derived from *$b^he\bar{e}/\bar{o}l$-ur-o-*, derived from a root *$\sqrt{b^hel}$- 'swell', particularly with reference to ON *bali* 'soft, grassy bank' and We. *bâl* 'peak, summit'. Morphologically, the form is analyzed as a *vr̥ddhi* formation with the suffix *-*ur-o*-, a thematicization of an old *-*u̯er/n*- heteroclitic as in *anowr* 'ring' (< *h_1eh_2n-ur-o-*) (Olsen 1999: 33, Kölligan 2019: 232). If true, the old oblique can perhaps be found in *bełown* < *b^hel-un-* 'seed' (⇒ *bełnawor* 'fecund'). The basic root is assumed to be *b^hel-* 'swell' (cf. IEW 120–2). Martirosyan (EDA 178) does not explicitly state that the word is non-IE but includes it in a list of words relevant to the European substrate (EDA 807).

Discussion The traditional etymology is problematic because of the unexplained *vr̥ddhi* formation and the suffix *-*uro*-, which only finds a doubtful parallel in *anowr*. In light of this, the comparison with ON *bali*, We. *bâl* is also uncertain. The establishment of the basic root *$\sqrt{b^hel}$- is doubtful as it relies on the assumption of root extensions and the comparison of a semantically wide range of forms. Crucially, no attested verbal forms can directly continue this root. On the other hand, there appears to be no particular reason to assume that *blowr* is of European substrate origin, and it could potentially be a much later loanword.

Conclusion No comparanda.

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IV 17. **boxi* 'hornbeam' (EDA 179–80, 807). Only attested in dialects, e.g. Loṙi *boxi*, Łarabał *pǒxi/ɛ* < quasi-ClArm. **boxi*. Martirosyan (EDA 179) also reconstructs quasi-ClArm. **buk^{c}i* on the basis of rural Łarabał *pǔk^{c}i* alone, but this word seems to refer to 'horse fennel' (Sargsyan 2013: 618).

Proposals Martirosyan (EDA 179–80, citing J̌ahowkyan) compares Gk. φηγός 'oak', Lat. *fāgus* and ON *bók* 'beech', explaining the root final *-*x-i* and *-*k^c-i* as tree suffixes. The word is not explicitly

considered non-IE, but the reconstructions are labelled quasi-IE, and the forms are included in a list of borrowings from the European substrate (EDA 801).

Discussion The Greek, Latin, and Germanic words for 'oak' and 'beech' reflect *$b^heh_2g/ǵo$-. There is no indication, apart from the distribution, that this etymon is not inherited from PIE. The comparison with the Armenian form is impossible, on the other hand, as we would expect **_bak_ or **_bac_, depending on the articulation of the velar stop. Reconstructing an _o_-grade *b^hoh_2go- could explain the vocalism if the _o_ of *_boxi_ is due to Meillet-Olsen's vowel dissimilation (*_u_ > *_o_ before _i_ in the following syllable). This would be morphologically unexpected, however. Moreover, the problem of the consonantism cannot be solved with reference to suffixation. Specifically, the existence of a tree suffix -_Vx_ can only be vaguely hypothesized on the basis of a few words without good comparanda; there is no evidence that it was ever productive on the Armenian side. The confinement of *_boxi_ to the north-eastern dialects makes it likely that it reflects a more recent loanword.[31]

Conclusion Uncertain. Not from a European substrate.

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IV 18. բոխ _bołk_ (_i_) 'radish' (HAB I: 465, EDA 181–2, J̌ahowkyan 2010: 134). First recorded in the Galen Dictionary (Greppin 1985: 95). The diminutive _bołkowk_ is found already in the _Hexaemeron_ by Basil of Caesarea, but here it might mean 'horn' (see EDA 181–2 for further discussion of this attestation). In the dialects, _bołkowk_ usually means 'radish' (Łazaryan 1981: 18).

Proposals According to Ačaṙyan (1918: 162, HAB I: 464–5), derived from _boł_ *'plant, shoot' (dial. 'bur parsley, _Caucalis_', cf. Łazaryan 1981: 18). He derives this word from PIE *b^hol-, comparing Lat. _folium_, Gk. φύλλον 'leaf'. From the same _boł_ with its reconstructed meaning, he also derives _bołboǰ_ 'sprout, blossom'. Martirosyan (EDA 181) accepts

[31] Perhaps the donor form was akin to Ch. _pxa_ 'hornbeam' with the final vowel replaced by the productive tree suffix -_i_ in Armenian.

bołboǰ to represent a reduplication of **bołǰ* < **bʰol-i̯o-*, but is more hesitant with regard to *bołk*, as the putative suffix *-k* is unestablished.

Alternatively, the word is compared with Gk. βολβός 'bulbous plant, tassel hyacinth (*Leopoldia comosa*), onion', βόλβιτον, βόλιτον 'cow dung' and Alb. *bajgë*, dial. *balgë* 'dung of cow, horse' (IEW 103, without noting the missing change of **b-* > ***p-* in Armenian); Demiraj 1997: 86–7 with references). Already Adontz (1938: 467) had compared Gk. βολβός and Li. *bumbulỹs* 'turnip, bubble, eye of a calf', while also considering the similarity to Akk. *puglu* 'radish'. J̌ahowkyan (1987: 462) wonders whether the Akkadian word can be a borrowing from Armenian.

Discussion The derivation from *boł* is unlikely, especially because the element *-k-* cannot be accounted for. It may be theoretically possible to start from the diminutive *boł-ik* and assume a secondary diminutive **boł-ik-uk* > *bołkowk*, whence *bołk* is a back-formation. The semantic shift to 'radish' is, however, difficult to account for, even if starting from a reconstructed, basic meaning like 'plant' or 'shoot'. Ačaṙyan adduces Fr. *radice* 'radish', derived from Lat. *rādīx* 'root', but this is far from a perfect parallel because the basic meaning 'root' is a much more appropriate archeseme for the designation of a root vegetable.

At least the comparison of Gk. βόλβιτον and Alb. *balgë, bajgë* 'dung of cow or horse' < **bolgʷ-* appears secure. It is likely that these words share a semantic development from 'bulb' vel sim.[32] This makes the comparison with Gk. βολβός likely as well. The variant βόλιτον, with apparent loss of the second β, and a suffix -ιτο-, is difficult to explain, and the variation βολβ- : βολ- is an indication that the word is of non-IE origin (see Beekes 2010 224–5). Furthermore, the root **√belgʷ-* contains two mediae in violation of PIE root constraints, as well as the exceedingly rare phoneme **b*. In order to compare Arm. *bołk*, we must assume an alternant **bʰolg(ʷ)-* with an initial aspirate, which would further indicate that the etymon is non-IE.

The hesitant proposal (J̌ahowkyan 1987: 462) that Akk. *puglu* 'radish', Syr. *puglā* are borrowed from Armenian can be rejected. The metathesis of liquid and stop, and the substitution of *b* for *p*

[32] Cf. Da. *hestepære* lit. 'horse pear', referring traditionally to inferior types of pear, but mainly to horse dung.

would be unexplained. More crucially, the word is attested already in the Old Akkadian period of the 3rd millennium BCE (CAD XII 476), where no (indirect) contact with Armenian can be assumed. Therefore, the Semitic forms are most likely unrelated. After all, we must also reckon with the potential sound symbolic nature of words referring to objects such as bulbs. This also goes for, e.g., Li. *bumbulỹs* 'turnip', cited by Adontz (1938: 467), for which several similar forms can be found (e.g. Li. *buñbulas* 'knot', *bañbalas* 'chubby child; short, stocky person'; see Smoczyński 2018: 94, 163). In turn, this circumstance also makes it difficult to be absolutely certain about any of the comparisons proposed above, but nevertheless, Gk. βολβός and Arm. *bołk* are formally and semantically so close that we may assume a common origin.

Conclusion Non-IE ***b^{h}olg$^{(w)}$-** (Arm) : ***bolg^{w}-** (Gk, Alb)

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IV 19. ***բոց*** *boc^{c}* (o) 'flame' (HAB I: 478, Olsen 1999: 51, EDA 191, J̌ahowkyan 2010: 137).

Proposals Ačaŕyan (HAB I: 478) considers the word derived from *$\surd b^{h}eh_{2}$- 'shine' (cf. Gk. φῶς 'light'), assuming that *-c^{c}* is a suffix. Most other scholars compare Lat. *focus* 'hearth, fireplace'. Petersson (1916: 285) reconstructs *$b^{h}o\acute{k}$-so-*, assuming a palatal stop on account of Arm. *bosor* 'crimson' < *$b^{h}o\acute{k}$-o-* (similarly IEW 162). Olsen (1999: 51) gives *$b^{h}o\acute{k}$-io-* as an alternative reconstruction, citing *lowc^{c}anem* 'light, kindle' < *louk-ie/o-* as an example of the outcome of *-$\acute{k}\underset{\cdot}{i}$-. Martirosyan (EDA 191) rejects the relationship with *bosor*, but maintains the comparison with Lat. *focus*, assuming a shared substrate word.

Discussion Ačaŕyan's etymology presupposes *$b^{h}(e)h_{2}$-s$\acute{k}$-o- which would yield Arm. **bac^{c}*. The widely supported comparison with Lat. *focus* is unproblematic.[33] As noted by de Vaan (2008:

[33] Matasović (2010) rejects the comparison because "Arm. -c^{c}- points to the PIE cluster *-s$\acute{k}$-." This is not accurate, since *vec^{c}* 'six' < **suu̯eḱs* shows that at least *-$\acute{k}$s had the same outcome. The etymology proposed for Lat. *focus* by Matasović is an old root noun *$d^{h}\acute{o}\acute{g}^{wh}$-s, *$d^{h}g^{wh}$-ós (*$\surd d^{h}eg^{wh}$- 'burn') with generalization of the devoiced, final

228), the root **bʰok-* has an illegal root structure with MA and T, so it is clear that we are dealing with a non-IE word. This is supported by the limited distribution.[34] Rather than a derivation **bʰoḱ-so-*, I would propose that the Armenian form reflects a root noun **bʰoḱ-s*. For another root noun that was later normalized to an *o*-stem, cf. *erbowc* (p. 30).

Conclusion Non-IE ***bʰoḱ-** (Arm, It)

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IV 20. ***բուրգն*** *bowrgn* (*-an*, *-ownkᶜ*, *-ancᶜ*) 'tower, pyramid' (Hübschmann 1897: 392–3, HAB I: 488, Olsen 1999: 950–1, EDA 246 s.v. *durgn*, J̌ahowkyan 2010: 140).

Proposals The word has been variously treated as either inherited, borrowed from a Semitic language, from Urartian or from an unknown (IE) language. Since long, the similarity with Gk. πύργος 'tower' (Hsch. φύρκος· τεῖχος) has been noted (Petermann 1837: 25). Hübschmann (1897: 393 with "?") and Ačaṙyan (HAB I: 488) consider Syr. *burgā* 'tower' to be the donor form. Adontz (1938: 465) notes Ur. *burgana* 'a kind of building' and assumes a common Near Eastern source for the Urartian, Greek and Armenian forms, but does not cite the Syriac form. J̌ahowkyan (1987: 430, 432; 2010: 140) considers Arm. *bowrgn* to be borrowed from Urartian. Obrador-Cursach (2019–2020) considers Gk. πύργος from an unattested Lyd. **prkus*, but he does not cite the Armenian form.

Others emphasize the striking similarity with Go. *baurgs* 'fortification, town', OHG *burg* 'castle' (Hübschmann 1897: 392–3). However, while these forms may simply reflect a root noun based on PIE **√bʰerǵʰ-* '(be) high, tall' (cf. Arm. *barjr*, Hit. *parku-* Skt. *bṛhánt-*), the Armenian *g* points to a velar **gʰ* instead of the

consonant. There is no evidence for this formation elsewhere, and the short vowel of Lat. *focus* remains unexplained.

[34] The strikingly similar Ket *boʾk* 'flame' is adduced by Ivanov (1983) but assuming any relationship seems far-fetched on the face of the huge geographical distance. Ivanov assumes borrowing through Nakh-Daghestanian, but no matching forms seem to exist here. Martirosyan (EDA 192) cites "NCauc. **bōncc'ʌ* 'flame'" after Nikolaev (as a potential loan from Armenian), but it is not clear to me what comparanda this reconstruction is based on.

palatal demonstrated by *barjr*. Likewise, Gk. πύργος has an irregular consonantism (for expected **πVρχ°). Both forms have an unexpected vocalism, as Greek υ can only point to **u* while Arm. *ow* must reflect **u* or **ō*. This has led to the assumption that the Armenian and Greek forms are borrowed from a reflex of **bʰerǵʰ-* in a lost IE language with *centum* reflexes of the palatals (Gamkrelidze & Ivanov 1995: 648, Olsen 1999: 951, EDA 246). Finally, some scholars have sought to explain the word as inherited, mostly in the context of *dowrgn* 'potter's wheel' (IV 29), which presents the exact same problem of *u*-vocalism and velar *g* in comparison with *daṙnam*, AOR *darjay* 'turn' < PIE **dʰerǵʰ-*.

Discussion The Armenian form cannot have been borrowed directly from Syr. *burgā*, as there are no examples of Syriac borrowings entering the Arm. *n*-stem declension. We would expect the Syriac word to be reflected as ***bowrg*(*ay*). Furthermore, the Syriac form does not have a Semitic etymology and is best explained as a loan from Late Latin *burgus*, perhaps a Germanic loanword, or even from Armenian.

If Ur. *burgana* means 'tower' or 'fortress', which is uncertain, it is likely to be connected to Arm. *bowrgn*. A borrowing from Urartian is unlikely, however, since the expected outcome would be ***brgan* (see II 58).

This means that the donor language of the Armenian word remains unknown. While the Arm. *u*-vocalism might be explained by assuming an old root noun with **ō*-grade, *-g-* can only reflect a velar, meaning that the root cannot be identified with **√bʰerǵʰ-*. While we might theoretically start from **√bʰergʰ-* 'keep, guard', this root is only sparsely attested (LIV² 79–80), and it seems better to pursue a solution that also incorporates the Greek forms. Gk. πύργος and Hsch. φύρκος show a consonantal variation that is clearly indicative of a borrowing (Beekes 2010: 1262).

Conclusion ***bʰurgʰ-*** (Arm) : ***purg-*** or ***pʰurk-*** (Gk).
Non-IE or from another IE language?

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IV 21. բուրդ *bowrd* (*o*) 'wool', *brdem* (*-ecʿi*) 'cut to pieces, crumble (bread)' (HAB I: 488–9, 492, Olsen 1999: 947, J̌ahowkyan 2010: 140).

Proposals Patrubány (1903: 59) reconstructs **bʰōrdʰo-* from PIE **√bʰerdʰ-*, comparing Gk. πέρθω 'ravage (a city), destroy, plunder', Lat. *forfex* (var. *forpex*) 'shears, pincers' and Skt. "*bardhaka-*" 'abschneidend, scherend'. Ačaŕyan (HAB I: 489) notes that an older meaning of the noun *bowrd* is reflected by the verb *brdem* 'cut to pieces' and by Ge. *burdo* 'chaff which is not threshed out, tangled mass (of hay, straw)', which he assumes to be a borrowing from Armenian (see III 13).

Olsen (2017b: 190) points out the problematic reconstuction of a vocalic stem with lengthened *o*-grade, rarely found outside *vr̥ddhi* formations. To explain the Armenian *u*-vocalism she suggests that *bowrd*, like *bowrgn* 'tower' (IV 20) and *dowrgn* 'potter's wheel' (IV 29), are borrowings from a reflex of **√bʰerdʰ-* in an unattested Indo-European language that underwent a change of **or* or **r̥* > **ur*.

Discussion The assumption that the root is identical with **√bʰerdʰ-* underlying Gk. πέρθω (see LIV² 77–8) is only possible by assuming a semantic shift from 'pick, pluck' to 'plunder, ravage' in Greek, which is implausible.

The Skt. form "*bardhaka-*" is not attested. Uhlenbeck (1898–1899: 187, 275) assumed the root *√bardh-* on the basis of the late forms like *vardhaka-* 'carpenter', *śmaśru-vardhaka-* 'barber, i.e. beard-cutter' (Rāmāyaṇa) and *vr̥ddha-* (adj.) 'cut off' (Mahābhārata). However, its (North-)Western Indic cognates (e.g. Lahndā *vaḍḍh-*, Gujarati *vāḍhvũ* 'to cut', Sindhi *vāḍho* 'carpenter') show that the *v-* is original (Tedesco 1945: 85, EWAia II: 521).

We are thus left with the Italic comparanda. Lat. *forfex* belongs with Umb. *furfa-*, *Ig.* Ib 1 **pune uvef furfaʕ**, VIb 43 *ponne oui furfant* 'while they shear [?] the sheep' (Untermann 2000: 303, cf. Flemestad & Olsen 2017: 219–20). Since Lat. *-rf-* cannot reflect **-rdʰ-* (which would yield **-rb-*), we must assume the Latin word was borrowed from Sabellic, potentially motivated by the influence of compounds in *-fex* (Ernout & Meillet 1951: 439).[35] Because the evidence for **√bʰerdʰ-* is weak, it is preferable to pursue an alternative etymology. De Vaan (2008: 232) assumes that the Umbrian forms reflect a substantivized adjective **bʰrdʰ-o-*. If this is amended to **bʰrsdʰ-o-*, it can be identical to PGm. **burzda-* (Go. *fotu-baurd* 'footstool', ON

[35] Walde-Hofmann I: 526 hold the view that *forfex* is metathesized from *forceps* 'tongs, pincers' but do not consider the Umbrian evidence.

borð ‘board, plank’), cf. **bruzda-* (ON *broddr* ‘spike, sting’, OHG *brort* ‘spear, edge’) (IEW 138).[36] The semantic variation within Germanic can be accounted for by starting from an original meaning ‘spike, edge’, supported by OIr. *brot* ‘goad, spike’ < **bʰrosdʰ-o-*. In this case, the meaning ‘shear’ did not develop from ‘pick, pluck’ (cf. Flemestad & Olsen 2017: 219–20) but from a noun meaning ‘a spiky, sharp thing’ to ‘pincers, shears’ (cf. the meaning in Latin).

If this analysis is correct, there are no convincing comparanda for Arm. *bowrd*. A vocalic grade **bʰre/osdʰ-* would yield ***Vrbe/ost*. The outcome of the cluster **-rsdʰ-* in the zero grade formation **bʰrsdʰ-* is not certain (see fn. 25 for further discussion), but at any rate, such a formation can be excluded on account of the vocalism. Positing borrowing through a lost IE language now requires the additional assumption that this language lost **s*, at least in the position between **r* and stop, for which there are no supporting examples. Additionally, it should be noted that the word is relatively rare in the oldest literature (Olsen 2017b: 190). If the denominal verb *brdem* betrays an older meaning ‘crumbling, piece’ or the like, we can thus assume that *bowrd* is borrowed from Ge. *burdo* ‘chaff, tangled mass’ (cf. Sv. *burdäl*, *birdw* ‘chaff’), which appears to be derived from the root of Ge. *burdva*, Sv. *libūrde* ‘tangle up’ (see also III 13). Thus, Arm. *bowrd* may originally have meant ‘lump, mass of wool’, distinct from the semantically neutral *asr* ‘wool’.

Conclusion Probably ← Ge. *burdo*.

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IV 22. գարի *gari* (*ea*; occassionally INST.SG *-wov*) ‘barley’ (Hübschmann 1897: 432, HAB I: 521–2, Olsen 1999: 439, EDA 199, 807, J̌ahowkyan 2010: 151).

Proposals A frequently discussed word. Bugge (1893: 5) was the first to compare Gk. κρῑθή, Hom. κρῖ, cf. Myc. ACC.PL *ki-ri-ta*. Further,

[36] The consonantal shape of **bruzda-* must have been rebuilt after the original full grade form **bʰresdʰ-o-* > PGm. **brezda-* (Nw. *bredd* ‘edge, side’) and/or the *o*-grade form **brazda-* (OE *breard* ‘brim, margin’). Conversely, **barzda-* (OE *beard*, ON *barð* ‘beard’) must have been based on the original zero grade **burzda-*. Li. *barzdà*, OCS *brada* and Lat. *barba* ‘beard’ are then best understood as Germanic loanwords (Kroonen 2011: 149–151).

one compares Alb. *drithë* 'cereal, grain'. Moreover, these forms have long been compared with Lat. *hordeum* 'barley', OHG, OS *gersta* 'barley' and Hit. *karaš* '(emmer) wheat', but often excluding the Armenian material (explicitly Ernout & Meillet 1951: 533, Walde-Hofmann I: 657; see also IEW 446, EIEC 51, HED IV: 74–5). Several phonological issues have been noted, however. Hübschmann (1897: 432) points to the irregularity that **s* would have been preserved before a stop in Armenian. Alternatively, Olsen (1999: 439) reconstructs the Armenian form as **gʰr̥-io-*, comparing instead Gk. κέγχρος 'millet' (if from **gʰengʰro-*, dissimilated from < **gʰer-gʰr-o-*) and κάχρυς 'roasted barley' (**gʰngʰru-*).

Others have noted several irregularities in the Greek material as well. Like the Armenian, it does not show a trace of a sibilant and, furthermore, contains an aspirated **dʰ* as opposed to the Latin and Germanic **d*. Consequently, most of these scholars assume a non-IE loanword variously reflected in Greek, Armenian and potentially Albanian (GEW II: 18–19, DELG 583, J̌ahowkyan 1987: 310, Demiraj 1997: 145–6). Many include the Germanic and Italic material, which would then reflect loanwords as well (e.g. Braun 1924: 61–2, Güntert 1934: 98–9, EDA 199, Kroonen 2013: 175, Šorgo 2020: 439).

Non-IE comparanda have also been adduced, in particular Ge. *keri* 'barley', *krt-il-i* 'autumn barley' (Bugge 1893: 5, Lafon 1934: 45, Deeters 1938: 140), as well as Bsq. *gari* 'wheat' (Schuchardt 1913: 306, Nehring 1936: 135), which in turn has been linked to West Caucasian and Nakh-Daghestanian material, including Tab. *gar-gar*, Lezg. *gerg* 'oats' (Čirikba 1985: 101–2).

Discussion PGm. **gerstō-* and Lat. *hordeum* (< **gʰ(o)rsd-*) both reflect a root **√gʰersd-*.[37] As stated by Frisk (GEW II: 19), however, the Greek forms cannot be explained by this reconstruction, as **gʰe/orsd-* would yield **χε/ορδ- and **gʰrsd-* would yield **χραζ-. Additionally, Hom. κρῖ reflects a root noun **κρῑθ* (cf. thematic κρῑθ-ή), but root nouns ending in **-dʰ* are not a PIE category. Likewise, Arm. *gari* cannot go back to **gʰ(V)rsd-*, which would yield ***gVrst* or perhaps ***gVṙt*.

On the other hand, the Italic/Germanic forms are difficult to separate from the Greek altogether, considering the identical

[37] The Latin form may theoretically reflect **gʰ(o)rd-*, but the idea that Gmc. *-rst-* somehow reflects **-rd-* (Gamkrelidze & Ivanov 1995: 565) is untenable.

meaning and agreement upon the phonemes *g^h, *r and *$d^{(h)}$. Alb. *drithë* can point to *$ǵ^hrsd$- from a root matching the Italic/Germanic forms, or to $ǵ^hr(i)d^h$-, which would match Gk. κρῑθ-ή (cf. de Vaan 2008: 289).[38] The appurtenance of Hit. *karaš* '(emmer) wheat' (< *$ǵ^hersd$- with lack of the word-final dental) is uncertain. Kroonen (2013: 175, 222) instead connects it with the old *s*-stem *$ḱrh_1$-*s*- (cf. Lat. *Cerēs*, PGm. **hersjan*- 'millet').

For Arm. *gari* to be compared to the Greek (and Albanian) forms, it is necessary to reconstruct an alternant *$g^hərit$-.[39] The thematic variant *$g^hərit$-*o*- yielded *$gariϑo$- > *$gariu̯o/eh_2$- > *gari*, *garwo*-, *garea*- in accordance with the treament of an old neuter *io-derivation. A parallel to this development may be seen in Arm. *eri* 'shoulder of an animal' if from *$(H)rih_1to$- or *$(H)reh_1ito$-, cf. Li. *ríetas* 'inside or upper part of the thigh; leg' (Olsen 1999: 444).

In view of their close formal and semantic similarity, it is very likely that the Armenian and Greek forms are related, but the phonological irregularities involved excludes an inherited word, just as the root noun *κρῑθ has a non-Indo-European morphology. With the Albanian form being ambiguous (*g^hrsd- or *g^hrid^h-), there are thus two main groups of alternants that can be reconstructed: Armenian and Greek *$g^h(ə)riT$- vs. Italic and Germanic *g^hersd-. We may now raise the question whether these two etyma are ultimately related within the substrate. Although nothing *per se* hinders the assumption that *g^hersd- is inherited, it is attractive to pursue the hypothesis that it is adopted from a source related to the donor

[38] The same development of the final dental is seen in e.g. *djathë* 'cheese' < *$d^hed^hh_1$-, Skt. *dádhi* 'sour milk' (see Demiraj 1997: 135–6). However, the usual outcome of a voiced stop in this position is *dh*. This probably means that the addition of the feminine ending *-ë* (< *$-ā$) in *drithë* postdated the devoicing of word-final *-dh* > *-th* and the voiceless variant was generalized throughout the paradigm (cf. Hyllested 2016: 74). The existence of an original root noun *$driδ$ can also explain the lack of umlaut *i* > *e* that would have been triggered by a PAlb. final *$-ā$. Thus, at any rate the reconstruction *$ǵ^hrid^h$- is preferable to *$ǵ^hri(H)ḱo$-, suggested by Schumacher & Matzinger (2013: 261), which does not find external support.

[39] In an earlier publication (Thorsø 2020), I posited *$ǵ^hrīt^hā$ for Armenian in an attempt to unify the Greek, Albanian, and Armenian forms under one reconstruction. As a quasi-IE reconstruction, it needs amendment because an intervocalic voiceless *aspirate* would yield Arm. t^c, unless the word was borrowed with *$ϑ$ at a point when the first part of the lenition had already taken place. Lenition of intervocalic *d^h > *y* instead of the usual reflex *z* (or *r*) has been proposed by Klingenschmitt (1982: 19), but has not gained widespread acceptance. Therefore, I here assume an unaspirated *t in alternation with the aspirate of the Greek and Albanian forms.

language of the Armenian and Greek forms, especially because a potential parallel for the alternation of the sequences **VsC* and **VC* is presented by the example **droud-* (Arm. *artoyt* 'lark') ∞ **stroud^{h}-* (Gk. στροῦθος 'sparrow') vs. **trosd-* vel sim. (ON *þrǫstr* 'thrush'), see IV 12. In sum, the following forms can tentatively be compared:

(I)	**g^{h}ərit-*	Arm. *gari* 'barley'
	**g^{h}rid^{h}-*	Gk. κρῖ, κρῑθή 'barley'
(II)	**g^{h}ersd-*	PGm. **gerstō* 'barley'
		Lat. *hordeum* 'barley' (< **g^{h}(o)rsd-i̯o-*)
		Alb. *drithë* 'cereal, grain' (< **g^{h}rsd-* or **ǵ^{h}rid^{h}-*?)

Of the non-IE comparanda adduced, the most promising is Ge. *keri* 'barley', *krtili* 'autumn barley'. Due to the initial aspirate (instead of glottalized *ḳ*), a borrowing from Greek can be excluded. For the same reason, and because of the vocalism, a borrowing from Armenian is impossible. The suffix *-il-* has a diminutive function and is highly productive in Georgian (Fähnrich 2012: 566). Therefore, we could assume that these forms were borrowed from a donor form **k(V)rit*, where in *keri*, the final dental stop was lost and *-i* reinterpreted as the ending of the NOM.SG.

None of the various West Caucasian and Nakh-Daghestanian forms adduced contain a dental stop, leaving only the structure **KVR*. The chance of random similarity is thus alarmingly high, especially when allowing laxness on the semantic side (for example, the forms adduced by Čirikba 1985: 101–2 mean 'rye' or 'oats'). Unrelated cereal names with a similar structure can be identified in e.g. Burushaski *gur* 'wheat' and Tibetan *k're* 'millet'. The occassional comparison with Bsq. *gari* 'wheat' cannot be correct, because it reflects a stem **gal-*, as preserved in e.g. *galbera* 'wheat', *galsoro* 'wheat field' (Lakarra 2002: 436).

Conclusion Non-IE ***g^{h}ərit-** (Arm) : **g^{h}rīd^{h}-** (Gk, ?Alb) : ***g^{h}ersd-** (It, Gmc).

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IV 23. ***գեր***ան *geran* (*a*) 'beam, log, joist' (HAB I: 504, Solta 1960: 294–5, Olsen 1999: 297, EDA 207–8, J̌ahowkyan 2010: 157). The meaning 'alder' is not attested in Armenian (*pace* EIEC 11).

Proposals Since Lidén (1905–1906), usually derived from *$\sqrt{\mu er}$- and compared with OIr. *fern* 'alder; pole, mast', MWe. *gwern* 'alder, mast', Gaulish **vernā* (→ Old Fr. *verne* 'alder, bow of a boat'); Alb. *verr* 'white poplar'. Pictet (1859: 227) connected Skt. *varaṇá-* for which he assumes a general meaning 'tree'. Since the Sanskrit word rather refers to '*Crataeva boxburghii*, a healing magical tree (etc.)' (AV+), Lidén rejects the comparison, but it is accepted by Friedrich (1970: 149, EIEC 11; cf. also Falileyev & Kocharov 2012: 71). Martirosyan (EDA 207–8, 807) accepts the comparison between the Celtic, Albanian, and Armenian forms (without mention of the Sanskrit), but also lists the word among European substrate words, presumably on account of its limited distribution.

Discussion The Celtic forms clearly reflect PC *μ*ernā* < *μ*er-neh*$_2$-. This reconstruction is typically also assumed for Albanian, where, however the expected outcome would be ***vjerr* (cf. Demiraj 1997: 414–5). Perhaps we can assume PAlb. **varnā* < *μ*orneh*$_2$-. Umlaut would have affected the definite *verri* from where it may have spread to the indefinite.

Like the Celtic forms, Arm. *geran* shows a nasal suffix, but instead of the expected Arm. **geṙn*, we find the suffix *-an*. This suffix originated as a conflation of the Iranian nominal suffix *-ana-* and the participal suffix *-ăna-*, but also appears in a handful of inherited words (see Clackson 1994: 109–12, Olsen 1999: 287–301). Olsen reconstructs *μ*er-n̥n-eh*$_2$- (cf. already Lidén 1905–1906: 486), noting the parallel correspondence of Arm. *beran* 'mouth' with Middle Irish *bern* 'fissure'. It is possible, however, that the expected outcome **geṙn* was secondarily refurnished with the suffix *-an* in its instrument noun function within Armenian. This change could have been provoked by the association with its exact synonym *hecan* 'beam, log, joist' (cf. EDA 208, 402).

On the other hand, the comparison with words for 'alder' is not unobjectionable despite the close semantic parallel found in Celtic ('mast'). If, as assumed by Olsen, we are dealing with an early thematicization of an old verbal noun in *-*men-* ⇒ *-*m̥n-eh*$_2$-

> *-n̥n-eh$_2$- (cf. Olsen 1999: 839–40), it is attractive to start from the verbal root *√h$_2$u̯er-, cf. Gk. ἀείρω 'bind together; raise', aor. ἄορτο (Hom. ἄωρτο) 'was hanging', παρηέρθη 'came to hang beside'; Alb. *vjerr* 'hang, suspend' (LIV^2 290 with references), whence *h$_2$u̯er-mn 'hanging, suspension' ⇒ *h$_2$u̯er-n̥n-eh$_2$ 'hanging, suspended thing' > 'beam'. Initial *h$_2$ is regularly lost before *u̯, cf. *geƚmn* 'wool, fleece' < *h$_2$u̯elh$_1$- (perhaps also *gom* 'stable, fold' ?< *h$_2$u̯os-mo-, IV 25).

Both possible comparisons provide no formal indications of a non-IE borrowing. The comparison with Skt. *varaṇá-* can be rejected (EWAia II: 513–4; see further Hiersche 1956 on the comparison with the theonym *Váruṇa*), but the limited distribution alone does not exclude the possibility that the root in question is archaic.

Conclusion PIE *√h$_2$u̯er-.

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IV 24. ***գլուխ*** *glowx* (*o*) 'head' (HAB I: 565–6, Solta 1960: 298, Olsen 1999: 43–4, EDA 220, J̌ahowkyan 2010: 163).

Proposals Often compared to Li. *galvà*, OPr. (EV) *galwo*, OCS *glava* 'head' (< *g^{h}olHu-eh$_2$-), but the comparison is rejected by Ačaŕyan (HAB I: 565–6). The absence of initial metathesis (*g^{h}l° > **Vłg°) appears to rule out the reconstruction of an initial cluster *g^{h}lHu- or *g^{h}luH- for Armenian, and thus Meillet (1936b: 36) and Solta (1960: 298) posit *g^{h}ōlu-k^{h}o-. Olsen (1999: 43–4) rejects this "quite peculiar" form as a PIE reconstruction and instead compares other cases of apparently lacking metathesis (*krownk* 'crane', *srownk^{c}* 'leg'), suggesting for all three cases an epenthesis *Kru > *K$_V$ru- that prevented metathesis (see also Olsen 1999: 285 fn. 188, 491).

Martirosyan (EDA 220) assumes a proto-form *g^{h}olHu-, identical to the Balto-Slavic forms, and suggests that *o became *ou through anticipation of the following *u (presumably as part of the regular *u*-epenthesis). This diphthong would then have been treated like secondary *ou̯ from *oP {_C}, first becoming *u, and later lost in the unstressed syllable.

The final *-x* has also been explained in various ways. The mechanical reconstruction *-k^{h}o- is considered a "nebenform"

by Pedersen (1906b: 252–3, cf. Pedersen 1924: 224) and "expressive" by Meillet (1936b: 36), and Solta (1960: 298), but none of these labels is particularly lucid. Greppin (1975: 146) notes only *glowx* as an example of a nominal suffix *-x*. Olsen (1999: 44) pursues the possibility that the aspiration of the voiceless velar is a result of the preceding laryngeal and reconstructs **gluHko-* > **gluk^{h}o-*. Because a final *-x* has the appearance of a suffix in a number of non-inherited words in Armenian, Martirosyan (EDA 220) suggests that the lexeme itself may be a European substrate word, but gives an alternative reconstruction **g^{h}olHu-k-h$_2$-o-*.

Discussion As for the initial cluster, there can be no other sources for *gl-* than **gul-* or **gil-*. The alternative reconstruction **g^{h}ōlu-k^{h}o-* is difficult to account for morphologically. A long *o*-grade would be isolated and can only originate from an otherwise unattested root noun **g^{h}ōlHs*. At any rate, a reconstruction with short **o* can be rejected since there are no examples of *u*-epenthesis involving *o*-vocalism (see the discussion in Olsen 1999: 798–9). The idea of a separate epenthesis affecting the sequence **KRu*, as suggested by Olsen, remains questionable and somewhat *ad hoc*, because none of the other examples of such a rule is compelling.[40]

The final *-x* could reflect an original suffix, but it has no explanation. As noted by Solta (1960: 298 fn. 32), Slavic shows examples of the suffix **-ko-* attached to old feminines in *-uh$_2$-*, (e.g. OCS *języ-kъ* 'tongue' < **(d)ngʰ-uh$_2$-*), but in this example, **°uh$_2$-* would be part of the root. At any rate, the derivational pattern is not known from Armenian. More importantly, the reflex *x* can only presuppose an earlier voiceless aspirate **k^{h}* which is exceedingly rare in inherited words (cf. Beekes 2003: 202). Even if the theory of laryngeal metathesis or "preaspiration" **-h$_2$k-* > **-k^{h}-* (Olsen 1994b) is valid for some stage of PIE, it is problematic to assume its operability in this example, where the addition of the suffix **-ko-* would appear to be

[40] In *krṙownk^{c}* 'crane' (< **gruh$_2$-*, Lat. *grūs*), the trilled *ṙ* has no clear explanation either, and onomatopoeic influence may have played a role in the development of the word (EDA 377), see also the discussion of GZ **ćero-*, III 54). The word *srownk^{c}* 'leg, shank' may be an Iranian loan (cf. EDA 586 with references). The two other examples adduced by Olsen are *korĭwn* 'whelp' (if < **g^{w}reb^{h}-nt-*, Gk. βρέφος 'child'), where the comparison is uncertain (perhaps rather a Nakh-Daghestanian loanword (see III 2 s.v. *xočkor*); and *orovayn* 'belly, womb', which Olsen reconstructs as **k^{w}ruHtni-*, comparing Li. *krūtinė* 'breast', a problematic comparison for both phonological and semantic reasons.

late. There is thus good reason to suspect foreign origin, as indicated by Martirosyan (EDA 220).[41] Although the suffix *-Vx* features mostly in plant names (e.g. *tawsax* 'box tree', *mananix* 'mustard'; cf. EDA 761), it may be noted that *-(ḫ)ḫe in Hurro-Urartian is more broadly used for deriving adjectives, cf. Hu. *tur-a/u(ḫ)ḫe* 'male, manly', **turi* 'man' (BGH 476); in Urartian often following *u/o*, cf. Ur. *šuḫə* 'new', *egur-u-ḫə/u* 'clean, pure' (?) (Wilhelm 2008: 111). Jumping from this observation to assuming an Urartian origin would, however, be premature, since a relevant root cannot be identified.

The Balto-Slavic forms have plausibly been connected to OCS *golъ*, SCr. *gôl* 'bald' (Schultze 1907, LEW: 131–2, Derksen 2008: 176) and compared to OHG *kalo* (GEN.SG *kalwes*), OE *calo* 'bald' (Orel 2003: 209, Kroonen 2013: 278). In this case, we must reconstruct **golH-u-* and the comparison with Armenian, which requires initial **gʰ*, becomes impossible. The reconstruction is tantalizingly similar to **klH-u̯o-*, reflected in Lat. *calvus* 'bald', *calva* 'bald head' and Skt. *kulvá-*, YAv. *kauruua-* 'bald'. If the alternation of initial **k* and **g* is due to a substrate origin of these words (thus EWN s.v. *kaal*), it is unusual that the word is found in Indo-Iranian. Furthermore, connecting the Armenian form is difficult, as it would point to yet another alternant with initial **gʰ* and an irregular vocalism (**ō*?). The assumption of such a relatively widespread substrate word is also problematic because the meaning is very basic. It is thus unlikely that Arm. *glowx* is a European substrate word, and it probably represents a later borrowing.

Conclusion No comparanda. Probably a local loanword.

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IV 25. գոմ *gom* (*o*/*a*) 'sheepfold, stable' (Hübschmann 1897: 436, HAB I: 574–5, Solta 1960: 411–3, Olsen 1999: 198, EDA 225–6, J̌ahowkyan 2010: 167).

Proposals Hübschmann (1883: 25) compares the verb *gom* 'exist', reconstructing *u̯osmo- (i.e. *√$h_2$ues-*, cf. Hit. *ḫuiš-*^{zi} 'to live', Skt.

[41] At any rate, it is better than Martirosyan's own alternative because the derivational pattern underlying a formation **gʰolHu-k-h$_2$-o-*, where a velar suffix precedes the collective marker, would be unparalleled.

vásati` spend the night', Go. *wisan* 'be'; LIV² 293), but he later becomes sceptical of the comparison (Hübschmann 1897: 436). Since Lidén (1906: 14–6), most researchers have compared the Germanic forms ON *gammi* 'earthen hut', Da. *gamme* 'fold, pen; earthen hut', Swiss G *Gämmeli* 'small barn or hut'. Ačaŕyan (HAB I: 574, cf. IEW 452) reconstructs **g^{h}omo-*, but the lack of vowel raising **om* > **owm* is unexpected. Olsen 1999 reconstructs **g^{h}osmo-* 'eating place', which she considers a thematicization of the verbal abstract **g^{h}os-mn-* 'eating, consumption' (Skt. *ghasana-*). Solta 1960 doubts whether the word is IE at all and adduces Ge. *gomi* 'stall'. Elsewhere, the Georgian word is considered a borrowing from Armenian (HAB I: 575, J̌ahowkyan 1987: 602). Martirosyan (EDA 225) assumes that the Armenian and Germanic forms reflect a European substrate word **g^{h}om(m)-*. He explains the lack of vowel raising as caused by the following geminate or by a type of umlaut caused by the stem-final **a*.

Discussion Deriving *gom* from **g^{h}om°* is not possible. The idea that an original geminate would have blocked the change **om* > *owm* is completely *ad hoc*. The alternative idea, preservation of **oN* (or lowering of **uN*) before a following **a* is also hard to corroborate. Martirosyan (EDA 225) cites *don* 'bread' (if < **d^{h}oHneh$_2$*, cf. also J̌ahowkyan 2010: 167) and *com* 'fasting' (← Syr. *ṣōm*). However, the former may be an Urartian loanword (see II 13), and the latter is an even younger loan and therefore irrelevant. There seems to be no basis for assuming that the word has a substrate origin, apart from its limited distribution.

The cognacy of the Armenian and Germanic forms is, however, questionable too. Although deriving both forms from **g^{h}osmo-* is phonologically unproblematic (cf. *em* 'I am' < **h$_1$esmi*), it is difficult to find semantic parallels for the semantic change 'eating place' > 'stable' or 'hut'. Therefore, I prefer to return to the idea of Hübschmann (1883: 25), and derive the Armenian word from **√h$_2$u̯es-* 'exist, stay, remain'. The loss of **h$_2$* is regular in the position before **u̯*, cf. *geł-mn* 'fleece' < **h$_2$u̯elh$_1$-*. A similar semantic development may have taken place in ToA *waṣt* B *ost* 'house' < **h$_2$u̯os-tu-* (Adams 2013: 134; unless this word is cognate with Skt. *vā́stu-* 'dwelling', Gk. ἄστυ 'town'). Admittedly, this solution comes at the price of severing the connection with the Germanic forms.

Ge. *gomi* 'stall' (with the derivation *gom-uri* 'id.') can easily reflect a borrowing from Armenian. The word spread further to Oss. (Iron) *gon*, *gom* 'barn, closet'. Sv. *gwem* 'basement; silo', Adyge *kon*, Kab. *gʷän* 'granary' have also been adduced as loanwords (Abaev) I: 523–4, but they are more divergent in both form and semantics, so their appurtenance cannot be confirmed.

Conclusion Probably PIE *h_2u̯os-mo-*.

* * *

IV 26. ***դալար*** *dalar* (adj.) 'green, fresh' (Hübschmann 1897: 438, HAB I: 612–3, Solta 1960: 348–50, Clackson 1994: 118–20, Olsen 1999: 51, EDA 231, J̌ahowkyan 2010: 180).

Proposals Has been compared to Gk. θαλερός 'blooming, fresh' < *$d^hl(h_1)ró$-, cf. θάλλω 'bloom', and Alb. *dal* 'sprout', presupposing a root *$\sqrt{d^hel(h_1)}$- 'green, sprouting, fresh'. The same root is seen in *dalowkn* 'jaundice' (Olsen 1994a), and the full grade forms *deł* 'herb', *dełin* 'yellow', and *dełj* 'peach'.

The final *h_1 is sometimes reconstructed to explain the medial Gk. -ε- against Arm. *-a-*, but Olsen (1999: 338) prefers the assumption of a secondary prop vowel, given the Gk. phonotactic restriction against *-λρ- which may have applied to Armenian too. Kölligan (2020a: 224) proposes that the Armenian form goes back to *$ǵ^hlh_3ró$- (Gk. χλωρός 'green-yellow'), showing an early change of *$ǵ^hl$- > *d^hl-. Despite this, he still prefers to maintain the comparison between the words with a stem *deł-* and the root *$\sqrt{d^hel(h_1)}$-. Martirosyan (EDA 231) assumes that the word may have been borrowed from a Mediterranean substrate.

Discussion If the change *Kl > *Tl* is valid, as assumed by Kölligan (2020a), it is very conceivable that a new root *$\sqrt{d^helh_3}$- 'green/yellow' would have been generalized on the basis of the generic adjective *$d^hlh_3ró$-. To be sure, this is an attractive scenario because 'green-yellow' is a far more appropriate starting point for the semantic range of the *deł-/dal-* forms than 'blooming, sprouting'. As a consequence of laryngeal loss, the newly extracted nominal root *$\sqrt{d^helh_3}$- could soon have merged with *$\sqrt{d^hel(h_1)}$- 'sprout' if

it (still) existed in the lexicon. Assumedly, this would only have strengthed its expansion to other derivatives (cf. Olsen 1999: 51, suggesting contamination). Nevertheless, given the Greek and Albanian evidence for a root *$d^hel(h_1)$-, we cannot really confirm this scenario. In any case, the confinement of this root to two or three branches is not positive evidence that it is of non-IE origin.

Conclusion PIE *$ǵ^hlh_3ró$- (or *$d^hl(h_1)ró$-).

* * *

iv 27. դամբան *damban* (*a*) 'tomb, sepulchre' (HAB I: 617–8, Solta 1960: 414, Clackson 1994: 120–1, EDA 232–3, J̌ahowkyan 2010: 182).

Proposals Compared to Gk. τάφος 'funeral rites, grave', ταφή 'burial', θάπτω 'bury', aor. ἐτάφην; τάφρος 'ditch, trench' Lidén (1906: 41–3). Considering the Greek and Armenian words to be isolated, Martirosyan (EDA 232–3) concludes that this is a "cultural word belonging to the Mediterranean-Pontic substratum". Later, Martirosyan (2013: 94) appears inclined to accept Indo-European provenance, although this is never made explicit. Following Chirikba, he considers Ab. *a-damra* 'tomb, grave, dolmen' a borrowing from an Arm. *$damb(a)r$-.

Discussion Like Gk. τάφος, Arm. *damb*- reflects a zero grade *d^hmb^h-. The final -*an* represents a widespread instrument and local noun suffix which is mostly of Iranian origin, but does appear to be inherited in a small set of words (Olsen 1999: 290). In the alternative form *dambaran*, the "container" suffix -*aran* is more unambiguously Iranian (< *(-*a*)-*δana*-). The root *$\sqrt{d^hemb^h}$- 'dig, bury' (?), finds a match in YAv. *daxma*-, Sogdian *δγm'y* 'grave', probably resulting from a dissimilation of PIr. **dafma*-, reflecting *d^hmb^h-*mo*- (Hoffmann 1965).[42] Because the dissimilation **fm* > **xm* is found in all Iranian forms, it is unlikely that Arm. *damban* and *dambaran* are wholesale Iranian borrowings, as hinted by Clackson (1994: 120–1). PGm. **damma*- (MLG *damm* 'dam', Old Nw. *damm*) may also belong with this root if from *d^homb^h-*mo*- (van Wijk 1909: 31). Together with

[42] The devoicing of PIr. *β > **f* was most likely caused by the following nasal, cf. YAv. *jąfnu*- 'deepening' against *jaiβi-vafra*- 'with deep snow'.

Gk. τάφρος 'ditch', it allows for assuming that the basic meaning of the root was 'dig',[43] whence it acquired the meaning 'bury; grave' in Armenian, Greek, and Indo-Iranian.

Clackson (1994: 120–1) discusses additional forms. He considers it possible that Rom. *dîmb* (also spelled *dâmb*) 'small hill' is borrowed from a lost Balkan language (e.g. Dacian, following Băltăceanu). However, the Romanian word can be borrowed from Hung. *domb* (Lajos 1967: 299). Clackson also sees a regular cognate in OPr. (EV) *dambo* 'ground, bottom', but judging from the divergent semantics, it is more likely a misspelling of **daubo*, cf. *padaubis* 'Tal' in the following entry of the Elbing Vocabulary; Li. *daubà* 'valley' < **dʰoubʰeh₂* (IEW 248–9, ALEW² s.v.).

In conclusion, the Armenian word finds regular cognates in at least Greek and Indo-Iranian and must be inherited from at least a late stage of PIE. It is tempting to follow the proposal of Chirikba and Martirosyan, who consider Ab. *a-damra* 'tomb, grave' an early borrowing from Armenian. It would presumably reflect **dambra-* < **dʰmbʰreh₂-*, a close cognate of Gk. τάφρος. However, additional examples of potential Armenian loanwords into West Caucasian languages are required to substantiate this hypothesis.

Conclusion PIE **dʰmbʰ-*.

* * *

IV 28. դարբին *darbin* (*a*) 'smith' (Hübschmann 1897: 438, HAB I: 636, Solta 1960: 146, Olsen 1999: 471, EDA 234–7, J̌ahowkyan 2010: 188).

Proposals Long considered a close cognate of Lat. *faber* 'smith, artisan'. The root has been posited as **√dʰabʰ-* 'passend (fügen)' (IEW 233–4, comparing also OCS *dobrъ* 'good', Li. *dabà* 'property', *dabinù*, *dabìnti* 'adorn'; Go. *ga-daban* 'be suitable'). According to Beekes (1996: 230), this reflects a European substrate word, although he is not commital on the relationship with the Latin and Armenian forms. Similarly, Martirosyan (EDA 235) states that their relationship is uncertain and that the Germanic and Balto-Slavic forms probably reflect a non-IE word.

[43] A word for 'ditch' can easily come to refer to what is piled up next to the ditch or trench (i.e. a bank), cf. ON *díki* 'dyke, ditch' matching E *ditch* and MLG *dīk* 'dyke'.

Discussion Whether or not *√*dʰabʰ-* of the Germanic and Balto-Slavic forms is of non-IE origin has no relevance here because as argued earlier (II 2), Arm. *darbin* should be separated from this root. It is more likely to be a loanword from Urartian **dabrinə*, cf. Hu. *tabrinni* 'smith' (see also Yakubovich 2009). Lat. *faber* may reflect a *Wanderwort*, ultimately from the same donor language. However, the Armenian form is not to be seen in the context of the European substrata.

Conclusion ← Ur. **dabrinə* 'smith'

* * *

IV 29. դուրգն *dowrgn* (*-an*, PL unattested) 'potter's wheel' (Hübschmann 1897: 440, HAB I: 687, Solta 1960: 301, Olsen 1999: 954–5, EDA 245–6, J̌ahowkyan 2010: 204).

Proposals Compared to Gk. τροχός 'wheel', τρόχος 'circular race, race-course', τρέχω 'run', and MIr. *droch* 'wheel'. For Armenian, scholars have traditionally assumed a lengthened grade **dʰrōgʰ-* that underwent a metathesis *°*ru*° > °*owr*°. Recognizing that such a metathesis is irregular, Letoublon & Lamberterie (1980) reconstruct **dʰōrgʰ-* under the assumption of *Schwebeablaut*. Based on the conclusion that Gk. τρέχω means 'turn' in Homer, Letoublon and Lamberterie identify the root with **dʰerǵʰ-*, underlying Arm. *daṙnam* (**darjna-*), AOR *darjay* 'turn' as well as Alb. *dredh* 'turn', and assumes *Gutturalwechsel* to explain the varying reflexes *g* and *j* in Armenian.

Hamp (1982) separates *√*dʰregʰ-* 'run' from *√*dʰerǵʰ-* 'turn', and reconstructs for the former an original root noun **dʰrōgʰ-s*, GEN.SG **dʰrgʰ-ós* and then assumes a levelling of nominative **drugan*, **darg-* ⇒ **durgan*, **darg-* at some point before the metathesis of initial **dr*, eventually levelling the vocalism in favour of *ow*.

Olsen (1999: 954–5) does not accept the reconstruction of what she calls a "morphologically unexplained lengthened *o*-grade of an otherwise unknown Schwebeablaut variant". Instead, she considers *dowrgn* to be a borrowing from a lost *centum* language, along with *bowrgn* 'tower' (see IV 20) and *herk* 'tillage'.

Martirosyan (EDA 245–6) reconstructs a root noun **dʰōr-gʰ*, GEN.SG **dʰr-ogʰ-s* from which the Armenian NOM-ACC.SG would be

regular. The Greek and Irish forms would both based on the oblique stem. At the same time, however, he notes (EDA 234) that the word displays the same irregularities in relation to the verb *darj-* 'turn' as *bowrgn* in relation to *barj-* 'lift', i.e. the *u*-vocalism and an alternation of **ǵʰ* and **gʰ*, and suggests that these forms represent cultural terms, connecting forms in non-IE languages, such as Dargwa *durug* 'spindle', Proto-Lezgic **tinug* 'axis of a spindle' and Ab. *a-dardə́* 'spindle'.

Discussion The comparison between the Greek and Middle Irish forms is not straightforward, since the Irish presupposes PC **drok-* instead of expected **drog-*. Hamp (1982) explains this by assuming that *droch* was abstracted from *dro*(*i*)*chet* 'bridge, causeway', which he analyses as an old compound **drogo-sent-* 'wheel-road'. A simpler solution is that of Matasović (2009: 105) who starts from a root noun **dʰrōgʰ-s* > PC **droks* from which the stem **drok-* was generalized as a basis for the attested *o*-stem.

Despite potential, vague traces of 'turn' for Gk. τρέχω in Homer as claimed by Letoublon & Lamberterie (1980), it is not possible to connect **√dʰregʰ-* reflected in the Greek, Irish and potentially Armenian forms directly with **√dʰerǵʰ-*, Arm. *darj-* 'turn'. The phenomenon of *Gutturalwechsel* cannot apply to positions *after* a resonant, for which we find no clear examples of depalatalization among the Armenian material.

Both the Greek and Irish forms uniformly point to **√dʰregʰ-* 'run, turn (*drehen*)', which does not match **√dʰerǵʰ-* 'turn (*wenden*)'.[44] It is not attractive to start from an original thème I root noun **dʰōrgʰ-*, as that would entail that all forms reflecting **√dʰregʰ-* are generalized from the old oblique. Outside Celtic, evidence for an old root noun with lengthened grade (type κλώψ 'thief') comes from the Gk. denominal verb τρωχ-άω 'run, gallop', which would have been derived from an unattested **τρώξ, *τρωχός* < **dʰrōgʰ-*. Following Hamp (1982), we can thus plausibly explain *dowrgn* from an older paradigm **drug*° (or **druc*^{c}) < **dʰrōgʰ-s*, *darg*° (< **dʰrgʰ-*). The consonantism would have been levelled in favour of **dVrg-* at some point before the metathesis of **D*$^{(h)}$*R* clusters, but the ablaut **u* : **a* was maintained, presumably on the model of such

[44] Notwithstanding *Gutturalwechsel*, there is no way to combine these roots apart from speculating on a pre-PIE derivational relationship

old root nouns as *town* 'house' < **dōm-*, GEN-DAT-LOC.SG *tan* < **dm-*. After the generalization of the old accusative **dʰrōgʰm* > **drugan* ⇒ **durgan*, the word entered the *n*-stem declension (the same mechanism as seen in *otn*, *otin* 'foot' < **pod-m*), and the root ablaut was neutralized in accordance with other *n*-stems. It is striking that both Armenian, Celtic, and Greek provide indirect evidence for an original hysterodynamic root noun, in which case the word must belong to an archaic layer of the PIE lexicon.

Conclusion PIE **dʰrōgʰ-*, **dʰrgʰ-*.

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IV 30. ***երբուծ*** *erbowc* (o) 'breast of an animal' (HAB II: 42, Olsen 1999: 49, EDA 258–9, J̌ahowkyan 2010: 222).

Proposals Usually compared to Gk. φάρυ(γ)ξ, -υ(γ)γος 'throat' and Lat. *frūmen* 'throat, larynx' (< **bʰrugs-men-*) (Lidén 1937: 92, GEW II: 995).[45] Beekes (1969: 197, 2013: 1556) considers the Greek word to be foreign (Pre-Greek) on account of the "prenasalized" suffix -υ(γ)γ- and the close semantic relationship with (ἀ)σφάραγον 'throat, gullet', φάραγξ 'cleft, gully' and the more formally distant βρόγχος, βρόχθος 'windpipe', βράγχος, βάραγχος 'hoarse' etc. It is unclear if Beekes still considers an areal connection with the Latin and Armenian forms to be possible. Nevertheless, the assumption of a non-IE borrowing in Greek leads Martirosyan (EDA 259) to propose that Arm. *erbowc* is a substrate word as well, which would indeed be the implication if the forms are related. Additionally, Martirosyan cites Go. *brusts* 'breast, chest' and Ru. *brjúxo* 'belly' as potentially related forms. These were originally adduced by Lidén (1937: 92) who was sceptical of a connection with a putative stem **bʰrugó-* that would require the analysis of **-ǵo-* as a suffix.

[45] Often compared is also ON *barki* 'throat, windpipe' (IEW 145) which would entail **bʰorg-* as against **bʰ(ŗ)rug-* of the Greek and Latin forms. Since this alternation cannot be explained in terms of IE ablaut, **√bʰerg-* is best considered separate. The same root is reflected in OE *beorcan*, *borcian* 'bark', Li. *burgéti* 'to sputter' (Kroonen 2013: 53, 61)).

Discussion As objected by Lidén, a PIE suffix **-ǵo-* does not exist. For this reason, and because of the semantic difference, the Germanic and Slavic forms are best considered separate from the Latin and Greek. The Gothic form, along with OS *brust*, MLG *borst* etc., reflects a root noun PGm. **brust-s*, but a thematic form exists in **breust-a-* (ON *brjóst*, OE *brēast*) where the ablaut grade agrees with the Ru. *brjúxo*. Remaining Celtic forms relfect an *n*-stem **brus-on-* (OIr. *brú*, MWe. *bru* 'womb, belly', f. *bron* 'breast', Old Breton *bronn* 'breast'). All these forms can thus be unified under root **bʰreus-*, assuming the Germanic forms reflect an old univerbation with **steh₂-* (Kroonen 2013: 76, 80) or less likely, a root extension *-t-*.

Having separated **√bʰreus-* from the Greek and Latin forms, we may note that the meaning of Arm. *erbowc* agrees best with the Germanic, Celtic, and Slavic forms, so it is worth considering if it belongs here instead. Formally, this does not appear to be too problematic. Although the cluster **ts* regularily yields the affricate *cᶜ*, aspiration of **t* > *tᶜ* is blocked in the position after **s*. Therefore, it seems likely that the cluster **sts* would yield *c* instead of *cᶜ*.[46] We may thus tentatively expect *erbowc* to go back to a root noun **bʰrusts* with an exact match in Go. *brusts*. Later transfer to the *o*-stem paradigm on the basis of the old nominative would not be unparallelled (cf. Olsen 1999: 48), but it cannot be excluded that an old thematic form **bʰrust-o-* (> ***erbust*) survived long enough in Armenian to merge with the old root noun. In sum, it is likely that Arm. *erbowc* reflects an inherited word, but the limited distribution means that a non-IE borrowing cannot be excluded.

Conclusion PIE (?) **bʰrust-* (Gmc, BSl, Arm)

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IV 31. ***եւղ*** *ewł* (vars. *iwł*, *eł*; GEN.SG *iwłoy*, once *ełow*, once inst. *iłov* etc.) '(olive) oil, butter, ointment' (Hübschmann 1897: 393–4, HAB II 251–3, Olsen 1999: 954, EDA 271–2, J̌ahowkyan 2010: 288). For a discussion of the Biblical forms, see EDA 271.

[46] There appears to be no counterexamples to this tentative rule. Martirosyan (EDA 398) proposes that *hacᶜ* 'bread' may reflect **past-s*, but there are several alternatives that can be given priority in light of the example *erbowc*.

Proposals Long compared with Gk. ἐλαία, ἐλᾶα 'olive', ἔλαιον 'olive oil, anointment oil', Cypr. ἔλαιϝον, Myc. *e-ra-wa/o* 'olive', and Lat. *olīva*, *olea* 'olive', *olīvum*, *oleum* 'oil'. This etymon is usually considered to reflect a Mediterranean substrate word (HAB, GEW I: 480, DELG 331). The status of the Latin word, either a borrowing from early Greek **elai(u̯)o-* or from a related form in an unknown donor language, is not entirely clear, though most scholars lean towards the former option (see Walde-Hofmann I: 205–6 with references, Beekes 2010: 400). According to Martirosyan (EDA 272), the Armenian form perhaps derives from **el(e/a)i̯w-* "through metathesis or anticipation."

Recently, completely alternative etymologies of *ewł* have also been proposed. Matzinger (2006) reconstructs **se/oib-lo-* and compares ToA *se/ip-* 'anoint', *sepal* 'fat', PGm. **saipwōn-* 'soap', Gk. εἴβω 'drop'. Kortlandt (2008) reconstructs **selpo-* and compares Gk. ἔλπος, Alb. *gjalpë* 'butter', Skt. *sarp-íṣ-* 'ghee', ToA *ṣälyp*, B *ṣälype* 'oil, ointment', and G *Salbe* 'ointment' (cf. Go. *salba*, OE *sealf(e)*), a comparison proposed already by Santalčean (*apud* HAB II: 252). Kortlandt assumes that **p* was lost in the position before **o* and that final *eł* regularly became *ewł* in word-final position.

Discussion Matzinger's derivation from **seib-lo-* is unlikely: in spite of a lack of clear evidence, the expected outcome of the cluster **bl*, like any cluster of media and resonant, is a metathesized ***łp* (EDA 272). In any case, a post-consonantal **b* would not undergo lenition. The reconstruction *se/oip-lo-* comes closer, but eliminates most of the potential cognates, unless voicing alternation is assumed.[47] Additionally, it cannot explain the widespread variant *eł* which would have lost *w* under unclear circumstances. Kortlandt's proposal **selpo-* has the disadvantage that the change of **po-* > **ho-* > *o* is only attested in initial position. It is a priori unlikely that **p* would develop to **h* after **l*, when the outcome of other *tenues* after resonants is generally a voiced or (secondarily) aspirated stop.[48]

[47] In any case, PGm. *saipwōn-* cannot belong here since it is evidently related to Lat. *sāpō* 'soap'. Because the irregular alternation *ai* ∞ *ā* is found in several substrate words shared by Germanic and Celtic (Schrijver 1997), the Germanic word was probably borrowed from this same substrate, while the Latin word was borrowed from Celtic (Simon 2021b).

[48] Cf. Arm. *ard* 'now' < **h₂erti* (Gk. ἄρτι); Arm. *erg* 'song' < **h₁erkʷ-* (ToB *yarke* 'worship'); Arm. *ənder-kᶜ* 'entrails' < **h₁enter-* (Gk. ἔντερα). Direct evidence for the

Meillet (1903) establishes that the paradigm according to the oldest manuscripts was *ewł*, OBL *iwło-*; *iw* is the result of unstressed *ew*, much in accordance with the change of pretonic *ē* > *i* (cf. Olsen 1999: 156–8, Weitenberg 2010). Additionally, we find the variants *eł* (continued in most dialects, HAB II: 272) and *ił* (only once, INST.SG *iłov*, Deut. 28.40). According to Beekes (2003: 205) "the sequence *-ewł* became *-iwł*", which is presumably meant to apply in all environments. He assumes that the original nominative was therefore **iwł*. This cannot be accurate. As already proposed by Hübschmann (1897: 329) on the basis of *zom* 'drawbridge' (7th c., ← Gk. ζεῦγμα), the post-classical outcome of stressed, preconsonantal *ew* was /jo/ (see also Weitenberg 2010). This diphthong is reflected in spellings of the type *geōł*, *geawł* for *gewł* 'village' (in the Ējmiacin manuscript of 989), and in dialectal forms such as Meḥri *yoł* 'oil' (as opposed to *giwł* > Meḥri *gül*; Ałayan 1954: 65).[49] In other words, whenever *iw* has replaced *ew* in stressed syllables, it must have been caused by paradigmatic leveling.

As shown by the predominance of the NOM-ACC *eł* in the traditional dialects, the NOM-ACC *iwł*, reflected in MEA *yowł* (cf. also MEA *gyowł* 'village' against dial. *geł*), must be have been taken over from the literary language (Weitenberg 2010: 255). We can therefore assume an older paradigm *ewł*, oblique *eł-*. Weitenberg (2010: 255) assumes that the form *iwł* was based on compounds like *iwł-a-ber* 'oil-bringing' where *ew* > *iw* would be regular, but it seems equally possible that it was influenced by the literary oblique forms in *iwł-*. It must have been introduced on the model of the general pattern of

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treatment of **p* in this context, and for stops after **l*, is unfortunately scarce, cf. *aṫb* 'dung' which J̌ahowkyan (1987: 146) derives from **slp-o-*, i.e. the same **√selp-* as adduced for *ewł* by Kortlandt, but it may also reflect **sh*$_2$*el-b*^{h}*o-* like Hit. *šalpa-* 'id.' (Schindler 1978, Olsen 1999: 37). Arm. *t*^{c}*arb*, *t*^{c}*arp*^{c} 'fishing basket' is identical to Gk. τάρπη, but this is a loanword (IV 33 s.v. *t*^{c}*arp*^{c}). See also Kümmel 2017: 447–9.

[49]The most famous example is perhaps *eawt*^{c}*n* 'seven' (MEA *yot*^{c}) which has universally replaced *ewt*^{c}*n* (EDA 270–1), cf. also *ardeawk*^{c} 'perhaps' (MEA *ardyok*^{c}) instead of *ardewk*^{c}. Rasmussen (1985: 106) cannot be correct in regarding the spelling ⟨eō⟩/⟨eaw⟩ as "a graphic reaction to the pronunciation of ⟨ew⟩ as [iu̯]". This would, in any case, be counterintuitive when the spelling ⟨iw⟩ was already widely used. Winter (1966: 202) ignores all examples save for *eawt*^{c}*n*, which he considers a contamination between *ewt*^{c}*n* and **awt*^{c}*n*. Notwithstanding the improbability of such a contamination, it is unclear why it would result in a diphthong and not simply the full replacement by one of the forms. After all, the regular change of *ew* > /jo/ is phonetically likely when seen as part of a wider tendency for the Classical Armenian accented, preconsonantal diphthongs to become rising, thus also *iw* > /ju/ and *ea* > /ja/.

stressed *ew* against unstressed *iw*, which was more transparent than the alternation *ewł*, *eł-*, which it replaced.

The deeper phonological details are more unclear, but considering the phonological problems associated with treating the word as inherited, the comparison with the semantically and formally close Gk. **ela*(*i*)*u̯*- remains preferable. It is usually assumed that the intrusive *w* of the original nom-acc stem is caused by epenthesis or metathesis. Alternatively, Pedersen (1906a: 402–3) and Kortlandt (2008) hold the opinion that word-final *-eł* and *-ił* became *-ewł* and *-iwł* regularly. This would mean that *ewł* may be regularly derived from earlier **eło-*. If so, it would be hard to understand why such relatively frequent words as e.g. *geł* 'beauty', *deł* 'herb', *keł* 'ulcer', *heteł* 'flood', and *meł* 'sin' exhibit no spelling variation whatsoever, while at the same time, writers were still conflicted about the distribution of *ewł* and *eł*.

Instead, we may assume that the diphthong *ew* is a result of *u*-epenthesis (cf. Weitenberg 2010: 254) just as in the case of *gewł* vs. obl. *geł* (Rasmussen 1985). This does not conflict with the fact that the word is nearly always attested as an *o*-stem. In fact, no potential examples of *u*-epenthesis are synchronically *u*-stems (cf. the discussion in Olsen 1999: 798–801). It is therefore warranted to assume an older **elu-* or **elō-*.[50] However, we cannot exclude that the borrowing was late enough to postdate the change of **u̯* > *g*, and that the form *ewł* is thus somehow a rendering of **ela*(*i*)*u̯*- passed on through an unknown medium. In any case, the phonological incompatibility between the Greek and Armenian forms would exclude the possibility that the forms were borrowed from the same donor language.

Conclusion Non-IE ?***el(u)**- (Arm) : ***elaiw**- (Gk, ?It).

* * *

[50] This form clearly comes very close to Akk. *ellû* 'clean, pure; holy, free', adduced by J̌ahowkyan (1987: 307 fn. 9), but although this word sometimes appears as an attribute of oil (see CAD IV: 103), it does not appear to have been substantivized in this sense, so we cannot really be sure that the words are connected. A better semantic fit is Akk. *ulû* 'finest, best oil' (CAD XX: 88; J̌ahowkyan 1987: 466), but it differs in the root vowel. Although it is possible that this form ultimately represents the same *Wanderwort* as Gk. **elaiu̯*- and Arm. *ewł*, it is not warranted to conclude anything on the basis of a single identical consonant.

IV 32. *թառ tᶜaṙ* 'roosting perch; perch on which fruits are hung (for drying)', *tᶜaṙim* 'perch, roost' (HAB II: 154–5, Solta 1960: 154–5, J̌ahowkyan 2010: 258). Attested only twice in the literature (Geoponica), but well attested in dialects.

Proposals Derived from **trs-ó-*, cf. Gk. (Att.) ταρρός, Ion. ταρσός 'rack for drying cheese, plaited tube, entangled roots; sole of the foot', τρασιά, ταρσιή 'hurdle for drying figs, dried figs, place for drying cereals'; and OHG *darre* 'kiln; scene of a fire', identified with the root **ters-* 'dry (up)' (LIV² 637–8).

Beekes (2000: 30) rejects the native etymology on the basis of the onstensible two-fold Greek reflex of **r̥* as -ρα-, -αρ- and the preservation of **s*. Additionally, he argues that the ablaut points to an old root noun whereas one would expect a derivation with an instrument suffix. Instead, he posits a noun **tars*(-) borrowed from the European substrate. Later (Beekes 2010: 1453–4), he maintains the possibility of the comparison with **ters-* but still wonders if it was "a loan from an intermediate language".

Discussion The development from **trs-ó-* > Arm. *tᶜaṙ* is regular. Although not attested directly, a trace of the *o*-stem may be seen in Ge. *taro* 'board, shelf', presumably an old loanword, with a meaning similar to J̌owła *tᶜaṙ* 'shelf' (HAB II: 155; see II 40). OHG *darre* must reflect **tors-eh₂-*.

The problem of the Greek "double reflex" of **r̥* is discussed in detail by van Beek (2022: 388–90), who notes that the rare form τρασιά is only attested in poetry (Aristophanes, Sophocles, Eupolis) and may therefore represent an epic form with an "artificial" treament of **r̥* > ρα, whereas the more widely attested Attic and Ionic forms have the regular reflex αρ. The preservation or restoration of -σ- is shared by all forms and can easily be influenced by the verb τέρσομαι 'become dry', where post-liquid **-s-* was preserved because it followed the accented syllable.

Regardless of whether one agrees with this analysis of the Greek material, the phonological development of the Armenian form is uncontroversial. Although few thematic derivatives of verbal roots in the zero grade can be reconstructed for PIE, an uncontroversial example is **iug-ó-* 'yoke' (Skt. *yugá-*, Gk. ζυγόν, Arm. *lowc*, with

secondary initial *l-* after *lowcanem* 'loosen'). This indicates that the formation is in fact archaic.

Conclusion PIE **trs-ó-*.

* * *

iv 33. ***թարփ*** *t^{c}arp^{c}* or *t^{c}arb* 'large basket or wickerwork, creel' (HAB II: 162, Clackson 1994: 183, EDA 281–3, J̌ahowkyan 2010: 261). Attested only twice: in Anania Širakac^{c}i (*t^{c}arp^{c}* 'fishing basket') and in Movsēs Dasxowranc^{c}i (*t^{c}arb* 'wooden framework'). Apart from this, the word is found in several dialects, mostly in the sense 'fishing basket' (see EDA 282).

Proposals Compared to Gk. τάρπη, ταρπός, cf. τερπ-όνη and perhaps τερπός 'large wicker basket', Hsch. δάρπη· σαργάνη, κόφινος. Ačaṙyan (HAB II: 162) reconstructs **trp-*. However, the etymon is frequently considered to be of non-IE origin (Furnée 1972: 183, Beekes 2010: 1453, Clackson 1994: 183, EDA 282–3).[51]

Discussion The Armenian and Greek forms may both reflect a zero grade **trp-* or even **th$_2$erp-*. However, in view of the highly limited distribution, the specialized semantics, and the lack of any root etymology, it is very likely that these forms reflect a loanword. Furthermore, if the Hesychius form δάρπη is reliable, it betrays a voicing alternation which can only show that the word is foreign.

The variant *t^{c}arb* is the ostensibly regular one, while *t^{c}arp^{c}* may be assumed to show the frequent dialectal change to aspirated stop after resonants. Martirosyan (EDA 282) states that Zeyt^{c}own *t^{c}ɔyp^{c}* indicates an original *t^{c}arp^{c}*, because stops in this dialect might have remained voiced after resonants, i.e. *-rb-* > *-yb^{c}-*, but as he admits, the evidence for this is inconclusive (cf. e.g. *ip^{c}* < *erb* 'when'). The possibility of interdialectal borrowing is also a possibility. If, however, we start from a ClArm. **t^{c}arp^{c}*, we could follow Martirosyan, who proposes an original amphikinetic **tórp-eh$_2$*, **trp-h$_2$-ér* > **t^{c}orb*, **t^{c}arp^{c}* with subsequent leveling. Such an ablaut

[51] The only root etymology known to me is the proposed link to PIE **tu̯erH-* 'catch' (Li. *tveriù*, *turiù* 'hold') by means of an unclear root extension **-p-* (IEW 1101). This requires an irregular change **tu̯rp-* > **tarp-* and can be rejected.

pattern would have been exceedingly rare, if it existed, however. It is therefore more likely that the development **rp* > *rpᶜ* was regular in pretonic syllables as opposed to *rb* elswhere, cf. *ertᶜam* 'go' < **h₁er-tí-*, *ortᶜow* 'calf' < **portú-* (Kümmel 2017: 448).

Conclusion Non-IE ***tarp-** (Arm, Gk).

* * *

IV 34. *թեղի tᶜeli* (*ea*) 'elm tree' (Hübschmann 1897: 374–5, HAB II: 171–2, Solta 1960: 420, Clackson 1994: 183, EDA 284–5, J̌ahowkyan 2010: 263).

Proposals Compared to Gk. πτελέα, Myc. *pte-re-wa* 'elm' (Bugge 1893: 39). Ačaṙyan (HAB II: 171–2) is sceptical of the sound change **pt-* > *tᶜ-* and compares *tᶜeli* only with Lat. *tilia* 'lime tree, linden'. Frequently, all of the Greek, Latin, and Armenian words are considered to reflect a Mediterranean loanword (Clackson 1994: 183, 234; EDA 285).

Discussion The word contains the highly productive tree suffix *-i*, which is parallel to (but not identical with) Gk. *-έα*. There is good evidence for the change of initial **pt-* and **tp-* > Arm. *tᶜ*, cf. *tᶜew* 'wing', *tᶜer* 'leaf, side', *tᶜṙ-čᶜim* 'fly' versus Gk. πτερόν 'feather, wing' etc.; *tᶜakčᶜim* 'hide', Gk. πτήσσω 'cower' (see Clackson 1994: 169). The appurtenance of Arm. *tᶜeławš* 'holm oak, cedar, pine' is uncertain due to the semantic difference and the unexplained suffix *-awš* (for a discussion, see EDA 283–4).

It is possible that the Latin word is borrowed from early Greek,[52] but the view that the Armenian word is borrowed from πτελέα (Friedrich 1970: 89 "certainly", IEW 847, GEW II: 611, Beekes 2010: 1247) is untenable. A Greek borrowing is already reflected in *ptłi*, *pteła-caṙ* 'elm', and the fact that the form *tᶜeli* is attested late (Galen) cannot explain the initial aspirate for Greek non-aspirate. In other words, the borrowing of **tᶜeł-* would conversely have to be very early, before the Armenian sound shift, and no parallels exist for such a scenario.

[52] Although the semantic difference speaks against it, initial *t-* appears to be the typical reflection of Gk. πτ-.

If Lat. *tilia* is borrowed from Greek, the exclusive correspondence of the Greek and Armenian words points to a root *√*ptel-* or *√*tpel-* which does not rule out IE inheritance *per se*. However, also Celtic provides evidence for a form with the non-IE *a*-prefix and the expected loss of the root vowel: Middle Breton *ezlen* and, We. *aethnen*, Old Cornish *aidnen* 'poplar' (the latter two with secondary assimilation *-*l*- > -*n*-) may reflect PC **axtlV-* < **a-ptl-V-* (Paulus van Sluis p.c.). Another form that potentially shows the *a*-prefix is Hsch. ἀπελλόν· αἴγειρος 'black poplar' (Ernout & Meillet 1951: 924), which, however, does not exhibit the expected vowel loss (for the loss of the dental stop, cf. also Epidaurean πελέα). One may also compare Lat. *pōpulus* 'poplar', which would show a solitary reduplicated formation (see Walde-Hofmann II: 340 with references); perhaps **pto-ptel-o-*.[53]

Conclusion Non-IE ***ptel-*** (Arm, Gk) : ***a-ptl-*** (Celt) : ?***pto-ptel-*** (It).

* * *

iv 35. *ʧnւq* *t^{c}owz* (*o*, later *i*) 'fig' (HAB II: 201–2, Olsen 1999: 936, EDA 295–6, J̌ahowkyan 2010: 273). A variant **t^{c}uzn* appears in some dialectal forms, e.g. Łarabał *t^{c}ɔznə*, Tbilisi *t^{c}uzə*, GEN.SG *t^{c}zan*.

Proposals Almost universally treated as a foreign word connected with Gk. σῦκον, συκῆ, Boeotian τῦκον, Myc. *su-za* 'fig tree' (< **suḳiā*) and Lat. *fīcus* (Meillet 1908–1909: 163, Walde-Hofmann I: 492, GEW II: 818).

Discussion The non-IE origin of the word is clear, as demonstrated by the irregular relationship between the initial consonants: Arm. *t^{c}-* < **t*(^{h})-, Gk. σ-/τ- (< **tḳ*-?) and Lat. *f-* (< PIt. **ɸ*-), and between the vowels Gk./Arm. **ū* vs. Lat. *ī*. A mechanical reconstruction of the Armenian form leads to **t*$^{(h)}$*uǵ*^{h}*-o-*. However, it is possible that

[53] Theoretically, we might isolate ἀπελλόν with *pōpulus* and reconstruct **h$_2$pel-*, **po-h$_2$pel-* respectively (Beekes 2010: 115). In light of the new evidence from Celtic, this is unattractive, however. The relationship with OHG *fel*(*a*)*wa* 'willow', Oss. *færv*, *farwe* 'alder' (Abaev I: 455–6, Kroonen 2013: 136) seems uncertain due to the large difference between the alder and the willow on the one hand, and the highly similar elm and poplar trees on the other.

the voicing of the final *-z* is secondary. Martirosyan (EDA 296, cf. 762) suggests that it arose by association with other plant names containing (a suffix?) *-j-*, e.g. *deł̇j* 'peach'. Intervocalically, this would further develop into *-z-*. With this assumption, we may reconstruct *$t^{(h)}uk$-*o*-, more compatible with the Greek and Latin forms.

The initial Lat. *f-* would reflect a quasi-IE *d^h-. However, In light of the Armenian and Greek comparanda pointing to initial *$t^{(h)}$- or *$t\underset{\cdot}{i}$-, it is more likely that the word was adopted after the devoicing of initial voiced aspirates in Proto-Italic, meaning the word was taken over with *t^h- or *$þ$-, cf. de Vaan (2008: 218) who assumes *ϑūko- or *ϑīko-. The simplest account of the disagreement between the vowels in Italic and Greek/Armenian would be the assumption that the donor form contained a rounded front vowel /y/.

The proposed connection with Hit. *šikka- as in *ḫaš(š)ik(k)a-* 'a kind of tree/fruit' and *maršikka-* 'id.' (Hoffner 1967: 43 fn. 58), as if from **diko-*, is doubtful. The proposed meaning 'fig' is unlikely given that these forms are distinct from ^{GIŠ}MA 'fig' (HED 3: 232).

A similar form is represented by Aghwan *tåxan*, Udi *to$^{\varsigma}$xa$^{\varsigma}$n* 'fig (tree)', which cannot be explained as a loan from any known language. Although this word is isolated within Nakh-Daghestanian, most of the remaining ND languages use relatively recent borrowings from Ge. *leɣvi* or NP *anǰir* (via Russian or Azeri) to denote the fig (cf. Klimov & Xalilov 2003: 181). Thus, we could assume that the Udi word represents a vestige of an old word native to the region or an old loanword from a form related to the donor of the Armenian, Greek, and Italic words (cf. HAB II: 202). Although the Udi word, for lack of comparanda, cannot be positively reconstructed, a hypothetical option is *$tV(t)\text{ɬ}(:)$-, with a voiceless lateral or affricate, which could explain the substitution by a velar seen in the quasi-Indo-European forms.

Conclusion Non-IE *$\mathbf{t^{(h)}uk/ǵ^h}$- (Arm) : *$\mathbf{t\underset{\cdot}{i}uk}$- (Gk) : *$\mathbf{t^hīk}$- (It).

* * *

IV 36. ***ⲃⲛⲗⲙⲣ*** *t^{c}owmb* (GEN.SG *t^{c}mbi*, GEN.PL *t^{c}mboc^c*) 'dam, mole, bank' (HAB II: 206, Solta 1960: 155–6, EDA 233 s.v. *damban*, J̌ahowkyan 2010: 275).

Proposals Ačaŕyan (HAB II: 206) treats it as an inherited word, comparing Gk. τύμβος (Corcyr. τῡμος) 'sepulchral mound, tomb', Lat. *tumulus* 'burial mound'; Middle Irish *tom* 'bush, tussock', We. *tom* 'dirt, dung'. He traces all these forms to a putative PIE **teum-* 'swell', comparing Lat. *tumeō* 'swell', Skt. *tumrá-* 'strong, big', Li. *tuméti* 'coagulate'. This root has traditionally been considered one of many "extensions" from **teu-* 'swell, strong, fat (etc.)' (IEW 1080–5), which is now reconstructed **√teuh$_2$-* (LIV^2 639–40) and kept apart from **√tu̯em-* 'swell' (LIV^2 654).[54]

A relationship between Gk. τύμβος and Gk. τάφος 'funeral rites, grave' was proposed by Georgiev (1941) in the framework of the Pelasgian theory. In other words, τυμβ- is considered a "Pelasgian" reflex of **√dʰembʰ-* 'dig' (see IV 27) with the same sound changes as πυργ- 'tower' from **√bʰerǵʰ-* 'high' (see IV 20 and Clackson 1994: 121). This proposal was criticized by Frisk (GEW II: 944) on account of the semantics. While τάφος designates 'grave, ditch', something dug out; τύμβος designates a hill or mound. Martirosyan (EDA 233 s.v. *damban*, 2013: 94) considers the Greek and Armenian forms to be of foreign origin, but maintains a possible connection ("substrate intermediation") with **√dʰembʰ-* (Gk. τάφος, Arm. *damb-an*). He also compares the *u*-vocalism to cases like *bowrgn* and *dowrgn*, but notes that *tᶜowmb* must belong to a younger period because the initial consonant appears as a voiceless aspirated instead of a voiced stop.

Discussion The traditional etymology gives no explanation for the additional **b(ʰ)* of the Armenian and Greek forms, apart from the outdated assumption of a "root extension". Furthermore, what seems to have been overlooked previously, Greek -β- and Armenian *-b-* are not comparable in this position: **tumb-* would yield Arm. ***tᶜowmp-*; thus the ancestor of *tᶜowmb* must have had a quasi-IE **p* or **bʰ*. Finally, if the Corcyrean form τῡμος is related, its loss of β would also be irregular, leaving little doubt that these forms are non-inherited (Beekes 2010: 1517–8).

Considering the *u*-vocalism in comparison with the example of *bowrgn* (IV 20),[55], we could hypothetically consider a reflex of

[54] As noted in LIV, ***teum-* would violate phonotactic restrictions, as it has two consecutive sonorants in coda.

[55] For *bowrd* (IV 21) and *dowrgn* (IV 29), I propose that alternative analyses are preferable.

*$\sqrt{d^{h}emb^{h}}$- 'to bury' in a lost IE language. However, the consonantism is different, and the meaning of the Armenian word is significantly removed from anything having to do with burials. Another complicating factor is the Syr. lexicographical hapax *tunpā* 'small hill'. One might consider it related to the donor of the Armenian, and even the Greek word, yet in view of its weak attestation, it is more likely a borrowing from Armenian (HAB II: 206). The plausiblity of the relationship between *$tumb^{(h)}$- and PIE *$\sqrt{d^{h}emb^{h}}$- would rely on the reconstructed meaning of the latter root. As previously discussed (IV 27), Gk. τάφρος 'ditch' and the potentially cognate PGm. **damma*- 'dam' (semantically near-identical to Arm. *$t^{c}owmb$*) suggests that the verb referred to the digging of trenches, and by extension, the construction of dams. This lends credence to the view that *$tumb^{(h)}$- is borrowed from an IE language.[56] The appurtenance of the Celtic forms, which would reflect PC **tombo*-, is doubtful given the divergent semantics. Lat. *tumulus* shows no trace of a cluster and is easily explained as a derivative of *$t\underset{\circ}{u}em$- (de Vaan 2008: 633).

Conclusion Non-IE ***tump/b^{h}***- (Arm) : ***tumb***- (Gk).

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IV 37. *բուփ* *$t^{c}owp^{c}$* (*o*) 'tuft, bush, bramble' (HAB II: 211, Solta 1960: 305, Olsen 1999: 205, J̌ahowkyan 2010: 276).

Proposals Petersson (1916: 248–9) compares Gk. τύφη 'Typha angustata, a type of bulrush' (unknown vowel length, GEW II: 949) under the assumption of a root *$t\breve{u}p^{h}$-. One has further compared OE *þūf* 'a standard made with tufts of feathers' (GEW II: 949). The Greek word has traditionally been compared to Lat. *tūber* 'swelling, tumor' as an "extension" of *$\sqrt{teuh_2}$- 'swell' (see also IV 36, *$t^{c}owmb$*), but it can be objected that this form is semantically distant and has an unclear word formation (de Vaan 2008: 632). Furthermore, the comparison would exclude the semantically more obvious cognacy with the Armenian form, because it requires *b^{h} (alternatively,

[56] Strikingly similar forms are found in Ugric, viz. Hung. *domb* 'hill, mound', Mansi (Tavda) *tōmp* 'hill; island', for which the UEW (896) reconstructs *$tɜmpɜ$. However, both the initial *d* and the preservation of *m* in Hungarian would be irregular, so at least the Hungarian form must be a more recent loan.

see Olsen 1999: 205 fn. 388). Lat. *tūfa* 'helmet-crest' is traditionally considered a Germanic loanword.

Discussion Considering the closer semantic relationship between the Greek and Armenian forms, it is attractive to compare these forms under the reconstruction **tŭp^{h}-*. A voiceless aspirate **p^{h}* is the only possible source of intervocalic Arm. *p^{c}*. Semantically, the connection with PIE **√teuh$_2$-* 'swell' is far-fetched, and would also require the assumption of an obscure root extension. Neither does a connection with Skt. *tū́la-* 'tuft, panicle' (Petersson 1916) seem possible. Considering the root structure with a voiceless aspirate, the limited distribution, and the appurtenance with the semantic field of flora, it is very likely that this etymon represents a loan from a non-IE language.

Conclusion Non-IE ***tup^{h}**- (Arm, Gk).

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iv 38. *իւն* *inj* (*u*, vars. *inc*, *iwnj*) 'leopard, panther' (Hübschmann 1897: 450, HAB II: 243, Solta 1960: 420–1, Olsen 1999: 110, J̌ahowkyan 2010: 285–6).

Proposals A relationship with Skt. *siṁhá-* 'lion' < **sinǵ^{h}V-* has long been recognized. Already Specht (1939: 14) notes that this word is probably non-IE (cf. Solta 1960, EWAia II: 727). Bailey (1979: 484) alternatively considers **sinǵ^{h}-* to be derived with nasal infix from the root reflected in Ir. **√haiz-* : **√hiz-* 'to move up' (Av. *pāiri-haēzaŋuha*) and considers Arm. *inj* to be borrowed from Ir. **hinza-*. Martirosyan (2013: 102) assumes that the Armenian and Sanskrit forms were borrowed from a North-Pontic or Near-Eastern language, citing also ToA *śiśäk*, B *ṣecake* 'lion'.

Discussion At first glance, the foreign origin of Skt. *siṁhá-* is supported by the vocalization pattern. If it were an inherited stem, we would expect ***siṇǵ^{h}-* > Skt. ***syahá-* (cf. Lubotsky 2001b: 8–9 on Skt. *índra-*). Additionally, the hypothesis of Bailey is not compelling, as there is no obvious semantic connection with 'move up'. Arm. *inj* cannot be an Iranian loan, as the loss of **h* would be unexpected

(Martirosyan 2013: 102). Such an assumption is also unnecessary, because Arm. *inj* is simply the regular reflex of **siŋ́ʰV-*.

A foreign origin of the etymon is also supported by a wealth of similar non-IE forms, especially in Nakh-Daghestanian, cf. Avar *çirą:* 'lynx, leopard', Tindi *c:éą̇wa*, *ç:érą̇u*, Bagvalal *ș:erą̇w* 'lynx'; Lak *çinią̇* 'leopard, tiger'; Tab. *leą̇än*, Lezg. *leą̇en* 'lynx, leopard' (< **ç(:)ɨrią̇:w-Vn* with loss of the initial syllable); Ch./Ing. *çōą̇* 'leopard'. Together, these forms suggest a PND mobile paradigm: absolutive **ç(:)órɔą̇*, oblique **ç(:)ɨrvɔ́ą̇-*/**ç(:)ɨrią̇:w-* (loss of rounding of a pretonic, preconsonantal vowel, cf. Schrijver 2018).[57]

As for the medial *-n-* of Lak *çinią̇*, we may note a larger tendency for resonants to be unstable and liable to neutralization within ND languages (Bokarev 1981: 18).[58] In this form, the change *r* > *n* may have been triggered by an earlier presence of the same nasal suffix attested in the Lezgic forms (Tab. *leą̇-än*, Lezg. *leą̇-en*; Schrijver p.c.). We find another instance of a form with a medial nasal in Akk. (Neo-Assyrian) *senkurru*, *simkurru* 'a kind of wild predator', which Blažek (2005: 68–9) argues to have passed through Elamite. Ultimately, this form could have come from a ND language as well.[59]

ToA *śiśäk*, B *ṣecake* 'lion' may have been the donor form of Chinese *shīzi* 'lion' (Adams 2013: 723), but any direct relationship between the Tocharian and the Sanskrit/Armenian forms should be rejected. These forms have little in common apart from the onset **si-*.[60] The Tocharian forms are characteristic of loanwords theorized to have their origin in the Bactria-Margiana Archaeological Complex (BMAC; see Bernard 2023: 228–30).

All in all, the situation clearly points to an early and widespread *Wanderwort*. A discussion of similar, but more peripheral forms in Dravidian, Afro-Asiatic, Omotic, and Tibetan is provided

[57] I am indebted to Peter Schrijver (p.c.) for these reconstructions and further clarification of my questions concerning the ND material.

[58] Compare e.g. Andi *onš:i*, Dargwa *ʕanč:ija*, Lak *arᶜš:i* 'earth' < PND **(l)onč:i* (Nichols 2003: 258); Archi *orᶜžu-*, Lak *urçа-*, Avar *hanç:il* 'right' < PND **haRç:i* (Nichols 2003: 259); Botlikh *haną̇:u*, Avar *ruą̇:* 'house' < PND **hVrVą̇:-* (cf. Nikolayev & Starostin 1994: 522). In some ND languages, like Northern Akhvakh, this is even seen on a synchronic level, where *r* becomes *n* in suffixes attached to roots with a nasal vowel (Creissels 2018).

[59] A form without any resonant may be seen in Ge. *ǯiki* 'panther, leopard', which may reflect an earlier **ǯ́ik-*.

[60] The attempt at comparing all three forms by means of regular sound laws was endoserd by Adams (1984) but has now been given up by the same author (Adams 2013: 723).

by Witzel (2003: 14–5), Behr (2004–2005), and Blažek (2005). It is striking that the word can be reliably reconstructed for Proto-Nakh-Daghestanian, whence the word may have originally spread, suggesting that the Nakh-Daghestanian languages were once spoken across a significantly larger area than presently.[61] The Armenian word must have been borrowed early enough to undergo loss of initial *s- and the assibilation of the final stop, which would match quasi-IE *ǵʰ, meaning that it must belongs to the earliest layer of loanwords.

Conclusion Non-IE ***siŋǵʰ-** (Arm, IIr). From Nakh-Daghestanian?

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iv 39. ***լար*** *lar* 'rope, string' (HAB II: 267–8, Clackson 1994: 39, 207 n. 32, Olsen 1999: 30, EDA 304, J̌ahowkyan 2010: 292).

Proposals Usually compared to Gk. εὔληρα, Dor. αὔληρα, 'reins', Hsch. ἀβληρά· ἡνία, Lat. *lōrum* 'leather strap'. The root is sometimes assumed to be *√u̯el- 'twist, turn', cf. Gk. εἰλέω 'wind, turn round', Arm. *gelowm* 'tighten, close, wring' (Lidén 1906: 100–1). Peters (1980: 49–50) reconstructs hysterokinetic *$h_1$ul-ēr- for Greek and holokinetic *$h_1$ul-ōr- for the Latin, but rejects the cognacy of the Armenian forms as he expects *u̯l- to yield **ełg- (parallel with *u̯r- > *erg-*). On the other hand, Lidén (1906: 101) notes that some initial consonants like *ḱ tend to disappear before *l in Armenian (cf. also HAB II: 268, Clackson 1994: 207 n. 32). No other evidence for the outcome of initial *u̯l- exists. Olsen (1999: 30) reconstructs *h_2u̯leh$_1$ro-, *h_2u̯loh$_1$ro-, *h_2u̯lh$_1$ro-, implicitly abandoning the link with *√u̯el-. The reconstruction of *h_2 is based on the assumption that εὔληρα is assimilated from αὔληρα.

[61] Another clear borrowing from Daghestanian is Akk. (LB lex.) *zirqatu* 'lynx, ?caracal' (CAD: XXI: 135, cf. Blažek 2005: 14), a feminine in *-at-*. It is likewise plausible that a ND language is the (ultimate) donor of Iranian forms reflecting *sargu- or *šargu-, e.g. Pth. *šgr*, Sogd. *šrγw* and Khot. *sarau* 'lion' (cf. Blažek 2005: 71–6). Considering that a rich agricultural lexicon, but almost no metallurgical words, can be reconstructed for PND, Schulze (2013) assumes a ND linguistic element in the agricultural Kura-Araxes horizon of the Early Bronze Age (ca. 3500–2400 bce), which at its peak reached across the entire Fertile Crescent (Sagona 2017: 214). See also Schrijver forthcoming.

Beekes (1969: 64) objects that **Hul-* would yield Gk. **ὑλ- and notes that **√u̯el-* does not have a prothetic vowel (laryngeal). Instead, he suggests that the word could be non-IE (Pre-Greek; Beekes 2010: 480–1), also considering the irregular variation of εὐ- and αὐ-. de Vaan (2008: 349) assumes that Proto-Greek could have had **āu̯lēra* with metrical shortening and hesitantly proposes **h₂e-h₂ul-ēr-*. However, he calls the suffixation "strange" and wonders whether the forms may have been borrowed from a lost IE language in view of the apparent ablaut. Martirosyan (EDA 304) reconstructs quasi-IE **h₁ulh₁ro-* > **uláro-* > Arm. *lar*, and assumes a Mediterranean substrate term.

Discussion The Armenian change **u̯l-* > *l-* is unconfirmed, but it cannot be rejected based on **u̯r-* > *erg-* alone. As noted by Lidén and Clackson, there is no counterevidence for an early loss of **u̯-* before **l*. The outcome would then not be ***ł-*, but *l-*, which does not trigger vowel prothesis. The alternative reconstruction with a full vowel **ul°* > **(ə)l°* is technically possible, but if the Georgian loanword *laro* (not ***ularo*) is early, as suggested by the stem final *-o*, it excludes this option (see III 43). The most likely reconstruction is therefore **u̯lh₁ro-*, but this would require revocalization after the vocalic grade forms (cf. Olsen 1999: 30). If the Armenian word is indeed inherited and cognate with the Greek and Latin forms, we should abandon the idea of a lengthened grade suffix **-ōr/-ēr*, which cannot account for Arm. *°ar* (cf. Schrijver 1991: 122–3). Accordingly, the root would have contained a laryngeal, meaning it cannot be **√u̯el-*. This root is semantically inappropriate in any case, as 'twist, turn' may be a suitable archeseme for 'rope, string' but not really for 'leather strap' or 'reins'.

The inherited status of these words is doubtful, due to (1) the unusual structure of putative **√Huleh₁-*, (2) the unexpected vocalization patterns in Greek and Armenian, (3) the variation of Gk. εὐ- and αὐ-, and (4) the limited distribution of the word. The Hesychian gloss ἀβληρά may suggest that the Greek form goes back to **a-u̯lēr-* with consonantal **u̯* and an initial **a-* of non-laryngeal origin (Schrijver's prefix?). If we compare the Armenian form, we would have to assume a substratal alternation of **ē*, **ă̄*, and **ō* in the root syllable. However, in the light of the semantic variation of the comparanda (perhaps less problematic if we were able to demon-

strate their direct cognacy), it is difficult to exclude the possiblity that the forms are unrelated.

Conclusion Uncertain. Perhaps non-IE *__ṷlă̆r-__ (Arm) : __ṷlōr-__ (It) : *__a-ṷlēr-__ (Gk).

* * *

IV 40. ***լոր*** *lor* (*i*/*o*?) 'quail' (HAB II: 297–8, Solta 1960: 421–2, Clackson 1994: 182, EDA 312–3, J̌ahowkyan 2010: 301).

Proposals Has been derived from an onomatopoeic root **lā-*/*lē-*, compared to Skt. *rā́yati*, Li. *lóju*, Lat. *lātrō* 'bark', Gk. λῆρος 'trash, trumpery', Arm. *lam* 'cry' etc. (Lidén 1906: 49–50, IEW 650–1). A close semantic match would be Gk. λάρος, λαρίς 'a sea bird'. The vocalism of the Armenian word is incompatible, however, since it can only point to short **o* (cf. Solta 1960: 422). Alternatively, the Greek and Armenian bird names have been interpreted as foreign (Mediterranean) words exhibiting a vocalic alternation **o* : **a* (Greppin 1978: 78, EDA 312–3). Tischler (HEG II(5/6): 44) adds Hit. *lari*(*ya*)-, which might refer to a sea-bird.

Discussion If the root of Skt. *rā́yati* (etc.) was **leh*$_2$-, it would be formally possible to consider Gk. λάρος a substantivized adjective **lh*$_2$*-ro-*. However, it would not explain λαρίς. Moreover, the Indic, Balto-Slavic, and Latin cognates show that the Indo-European root meant 'to bark'. This makes it a very unlikely basis of a bird name, unless it passed through a meaning 'cry' (as in Armenian), but this meaning is not attested in Greek at all. The meanings of Gk. λῆρος 'trash, trumpery' and Gk. ληρέω 'speak foolishly' are both explicable from 'bark'.

Formally, Arm. *lor* cannot be derived from **leh*$_2$- or **loh*$_2$-, so the indirect comparison with Gk. λάρος, λαρίς is preferable. This entails an underlying alternation of **o* : **a*. The biggest issue is the semantic difference. Martirosyan (EDA 313) suggests that it reflects the Armenian migration away from the coast. However, we find a closer semantic match in Hsch. σισίλαρος· πέρδιξ. Περγαῖοι (partridge).[62] The further comparison with Hit. *lari*(*ya*)- (< **lari-* or **lori-*)

[62] Note that an initial **sisi-* would not surface at all in Armenian (**sisi-* > **hihi-* > **i-*, lost in pretonic syllable).

is formally unproblematic, but it is hampered by the fact that the exact meaning of the Hittite word is unknown.

Since an *o*-stem is only marginally attested in Armenian, it seems reasonable to follow Martirosyan (EDA 313) in positing the immediate donor form as an *i*-stem **la/or-i-*.

Conclusion Non-IE ***lor-i-** (Arm) : ***lar-i-** (Gk, ?Anat)

* * *

IV 41. ***լուսանունք*** *lowsanownkʿ* (PL) 'lynxes', a hapax in *Alexander Romance* (Hübschmann 1897: 454, HAB II: 302–3, Solta 1960: 161–2, EDA 454, J̌ahowkyan 2010: 302).

Proposals Since long compared with Gk. λύγξ, GEN.SG λυγκός (or λύγγος); OHG *luhs* (m. < **luhsa-*), Elfdalian *luo* (f., < **luhō-*); Li. *lúšis*, OPr. *luysis*, and Ru. *rýsь*.[63] These cognates show several formal discrepancies, including the *r* of the Slavic forms, the long *ū* of the Baltic and Slavic forms, and the additional nasal in the Greek forms (cf. Li. dial. *lųnšis*, unless the nasal is secondary here), along with the variation of internal -γκ- and -γγ-. Accordingly, they have been interpreted as reflecting early loanwords from a non-IE language (Furnée 1972: 121, Beekes 2010: 875, EDA 454).

Discussion The NOM.SG can be restored as *lowsan*(*n*)*. This implies a root **loys-* which can reflect both **louḱ-* and **lounḱ-*. The morphology of the Armenian form is unmatched among the comparanda and appears reminiscent of an inherited word, suggesting a reconstruction **louk*(*-s*)*-n̥n-eh*$_2$ 'the bright one'? ⇐ **louk*(*-s*)*-mn̥* 'brightness' (cf. dial. **lusamn*, see HAB), secondarily adapted to the *n*-stem paradigm, i.e. a derivational type parallel with *artewanownkʿ* (PL) 'brow, eyelid' < **drep-n̥n-eh*$_2$ (cf. Olsen 1999: 296–7). However, such a scenario should imply that the remaining IE words for lynx are also inherited derivations of the root **leuk-* 'light, bright; to see'. This has indeed been assumed (cf. e.g. EIEC 359–60). In that case, however, it would be difficult to explain the discrepancy observed between these forms unless resorting

[63] The inclusion of Middle Irish theonym *Lug* is highly uncertain as the meaning 'lynx' is only conjectural.

to taboo deformation, which is unlikely because the lynx is not generally considered a threat to human life or livelihood.

I consider the most likely scenario to be a type of compromise between inheritance and borrowing. A non-IE word for 'lynx' was borrowed into Armenian, Greek, Balto-Slavic, and Germanic. The Armenian reflex became homophonous with *loys* 'light' resulting in folk-etymological association between these words and the independent formation of the derivative **lusan*(*n*) and dial. **lusamn* (thus EDA 454). The full vowel *ow* in the unstressed syllable of the Armenian form suggests that the input was **lou*(*n*)*ḱ*- with a diphthong. It cannot be excluded that this vocalism is also a result of the secondary folk-etymological association with *loys* 'light', however.

Conclusion Non-IE ***l(o)u(n)ḱ**- (Arm) : ***lunḱ**/**ǵ**- (Gk) : ***lūḱ**- (Blt, Gmc) : ***rūḱ**- (Sl)

* * *

iv 42. խաւոր *xstor*, *sxtor* (*o*/*i*) 'garlic' (HAB II: 428, Olsen 1999: 936, EDA 333–4, J̌ahowkyan 2010: 353).

Proposals Compared to Gk. σκόροδον, σκόρδον 'garlic' and Alb. *hurdhë* (pl *hurdha*), *hudhër* (literary variant). Pokorny (IEW 941) connects the Greek and Albanian forms (excluding Armenian) with PIE *√*sker*- 'cut'. Ačaŕyan (HAB II: 428) reconstructs **skodoro*-. By others (J̌ahowkyan 1987: 302, Olsen 1999: 936, EDA 333–4), the three words are thought to reflect independent borrowings of a non-IE word.

Discussion There are multiple problems with Pokorny's etymology. (1) The semantic link with 'cut' is arbitrary. (2) It requires a root extension *-d*-. (3) It does not explain the second ο of σκόροδον. (4) Alb. *u* cannot be explained by an *o*-grade or zero grade formation (cf. G. Meyer 1892: 59, Demiraj 1997: 204). (5) The Armenian form would be left unexplained, since initial **sk*- yields Arm. *cᶜ*-. For the same reason, Ačaŕyan's reconstruction **skodoro*- cannot be correct. Still, the formal and semantic similarity of the forms cannot be ignored, and it is clear that we are faced with loanwords adopted from an unknown language.

It is difficult to decide which of the Armenian variants is primary. While the variant *xstor* appears in the Bible, and *sxtor* not before the 13th c. translation of *Geoponica*, the comparison with the Greek and Albanian forms suggests that the Biblical variant *xstor* is secondary (cf. Greppin 1998: 60). Alternatively, Martirosyan (EDA 334) assumes that *sxtor* arose by association with *sox* 'onion'. He is sceptical of what he calls a "cycling double-change" from **sxtor* ⇒ *xstor* ⇒ *sxtor*. Yet, as he admits, the variant *sxtor* may simply have been preserved in the majority of dialects all along, while the innovative *xstor* happened to be present in the dialect forming the basis of Classical Armenian. This is the most economical scenario because Martirosyan's assumption of an input **skʰodoro-* adapted as **kʰs(o)doro-* > *xstor*, later ⇒ *sxtor* also seems to rely on two irregular or analogical changes. At any rate, under the assumption of independent loans into Greek, Albanian, and Armenian, it seems most economical to assume that the Armenian (and Greek) word was adopted with the secondary **s*$_2$ only after the change of original **s* > *h*.

Conclusion Non-IE ***s$_2$kʰudor-** (Arm) : ***s$_2$kor(o)d-** (Gk) : ***skurd-** : ***skudVr-** (Alb)

* * *

IV 43. ***ծղխնի*** *cłxni*, *cxni* (*ea*) 'hinge, pivot'. Also written *cxani*, *cxłni*; and with initial *č-*: *čxni*, *čxan* (HAB II: 263, Olsen 1999: 951, J̌ahowkyan 2010: 365; for attestations see Martirosyan 2016).

Proposals No etymology is given by Ačaṙyan (HAB II: 263). J̌ahowkyan (2010: 365) proposes a derivation **cił-ix*, from *cił* 'stalk, stem'. Martirosyan (2013: 114, 2016) compares Gk. γίγγλυμος, γίγλυμος 'hinge, pivot, clasp', and posits a Mediterranean substrate word **ǵinyl(u)m-*, becoming **ci(n)ɣln-* > **cixln-* > **ciłxn-i*.

Discussion J̌ahowkyan's etymology is semantically arbitrary while the suffix *-ix* and the variation of *c* and *č* is unexplained. The semantic and formal similarity of the Greek and Armenian forms, as well as the formal variation within both languages, make it clear that they represent loanwords from a common donor.

Martirosyan's reconstruction **ǵinɣyl(u)m-* is clearly intended to represent a synthesis between the Greek and Armenian forms, and we may try to specify their individual protoforms more precisely.

Arm. *cłxn-i* contains the productive suffix *-i* (Martirosyan 2016). The base **cłxown* presupposes quasi-IE **ǵilkʰuN*(-). It is conceivable, however, that *cłx*° is merely an orthographical replacement of *cxł*° if the word was already pronounced [tˢəɣəɣˈni] (cf. the spelling variants *cxtni* and *cxni*). In this case, the Armenian form can reflect **ǵikʰluN*(-). This comes even closer to the Greek form, going back to **giglum-*. Because no trace of the nasal in Gk. γιγγ° appears in the Armenian form, it is probably secondary in Greek.

Both protoforms can now be represented by **giKlum* (or **gilKum*), separated only by an alternation of medial **g* ∞ **kʰ*, and a potential metathesis of the medial cluster. The fact that Greek shows the nasal -μ- as opposed to Armenian *-n-* suggests that the Greek form was thematicized early, while the Armenian form was maintained as a consonant stem long enough to undergo the change of final *-m* > *-n*. Internal Arm. *-an-* may point to a syllabic nasal, i.e. a form **ǵilkʰn̥-*, which could suggest that the word was adopted early enough to be embedded in a mobile paradigm.

The variants with initial *č-* ostensibly point to a quasi-IE initial **gi-* (secondary palatalization as in *čmem* 'squeeze' < **√gem-* [LIV² 186]). However, the borrowing event must have been early enough to undergo the Armenian change of initial **ǵ* > *c* and probably the change of final *-m* > *-n*. It is unlikely that two variants, respectively with **ǵ-* and **g-* would have been maintained from that point in time. For this reason, it is most likely that one of the variants is secondary.

Conclusion Non-IE ***ǵilkʰum** or ***ǵikʰlum** (Arm) : ***giglum-** (Gk)

* * *

iv 44. ***կաղամախ*** *kałamax, kałamaxi* (*ea*) 'white poplar, aspen; (?) pine' (HAB II: 492, EDA 347–8, Olsen 1999: 936, J̌ahowkyan 2010: 376).

Proposals Considered an Urartian loanword by Ačaṙyan (HAB II: 492), who cites a number of similar forms in the neighbouring

Turkic and Daghestanian languages, especially Azeri *qələmə* 'poplar', Lak *kalaxi* 'aspen'. Saradževa (1981) compares the Hesychius gloss καλαμίνδαρ· πλάτανος ἡδονιεῖς (plane tree), following J̌ahowkyan. She identifies -δαρ with the Thracian reflex of PIE **dóru-* 'tree' and considers καλαμιν- to be a Mediterranean substrate word, reflected also in Armenian *kałam-axi*. This line of thought is followed by Martirosyan (EDA 348), who reconstructs a Mediterannean-Pontic tree name **kalam-*, furnished in Armenian with a tree suffix *-ax*.[64]

Discussion Because the existence of a tree suffix *-ax* cannot be independently established, a better solution is to analyse Arm. *kałamax*(*i*) as a Nakh-Daghestanian loanword. It would be a compound or syntagm containing **ḳala-* 'white' (cf. Lak *ḳaʿla-šа* 'white') and the widespread tree name represented by Lak *marq* 'birch', Ch. *maχ* 'aspen', Ing. *miχ*(*a*) 'aspen, poplar' (Vahagn Petrosyan p.c.). Although such a compound is not directly attested, it would be parallel with e.g. Lak *ḳaʿla-hi* lit. 'white birch', 'aspen, poplar' and *ḳaʿla-ǯarlil* 'fir'. In any case, the loan is not shared with any other Indo-European language.

Conclusion Borrowed from a Nakh-Daghestanian language.

* * *

IV 45. *կաղց, կաթն **kałcᶜ, katᶜn* (GEN.SG *-in*, ABL.SG *-anē*, INST.SG *-amb*) 'milk' (HAB II: 480–1, Olsen 1999: 137, EDA 345–6, J̌ahowkyan 2010: 372).

Proposals The usual form is *katᶜn*, which Ačaṙyan (HAB II: 480–1) compares Gk. γάλα, GEN.SG γάλακτος, γλάγος (Il.) and Lat. *lac*, GEN.SG *lactis*. This etymology is rejected by Rasmussen (1999) and Olsen (1999: 137) who instead propose a derivation from a root **gʷeh₁t-*, but again defended by Martirosyan (EDA 345–6).

The dialects Agulis, Meɬri and Karčewan have *kaxcᶜ*, which must reflect older **kałcᶜ*, because **a* would have yielded Agulis *ɔ* before an original *x* (HAB II: 480, EDA 345). Weitenberg (1985) analyses this

[64] J̌ahowkyan (1987: 612) notes also Lezgian *qavaχ* 'poplar'. However, this word, found also in Rutul, Aghul, Khinalug and Tabasaran, is probably a borrowing from Turkish *kavak* 'poplar'.

**kałcᶜ* as the original nominative of a root noun **g(a)lKt-s*, which would better match the Greek and Latin words for 'milk' (accepted by Rasmussen 1999). He maintains the relationship with the Classical form *katᶜn*, which he assumes reflects the original accusative **glktm*.

Discussion The view that *katᶜn* can reflect an accusative **glktm* is difficult to justify phonologically. Kortlandt (1987: 51 fn. 1) assumes loss of *l* before an aspirate, but this does not explain why it was preserved in the dialectal form **kałcᶜ* (beside other counterexamples). Martirosyan (EDA 346) proposes an analogical explanation by assuming a regular development to NOM.SG **kacᶜ*, ACC.SG **kałtᶜn* and subsequent "levelling" to **kacᶜ*, *katᶜn* in most dialects, but **kałcᶜ*, **kałtᶜn* in the remaining (e.g. Agulis), before the general nominative-accusative syncretism. Such a scenario is not compelling, because it assumes that in two independent cases only one sound was analogically transferred or dropped, still leaving two heterogenous stems with no relation within any productive derivational system.

As for the assumed change **g(a)lkts* > **kałcᶜ*, it is unclear whether the loss of the second velar is regular. It may be worth considering if this was in fact a palatal **-ḱ-* (cf. Rasmussen 1999: 621), which is not contradicted by any cognates. Thus, **galḱts* would yield **kałscᶜ* with subsequent dissimilation. Furthermore, it is hard to exclude Alb. *dhallë* 'buttermilk' from the comparanda, but this would immediately require a protoform with initial **ǵ-* (Demiraj 1997: 153–4), which is contradicted by Arm. *k-*. This variation, together with the unusual structure of the stem **glḱt-*, suggests that the word is non-Indo-European.

With the above considerations in mind, *katᶜn* and **kałcᶜ* should be etymologically separated.[65] For *katᶜn*, a relationship with *katᶜ* 'drop' and particularly *kitᶜ* 'milking, emulsion' (*kitᶜ-kᶜ* 'vintage') is likely. Tracing these to a root **gʷeh₁t-* (cf. especially Far. *kváð* 'sticky

[65] Olsen (2011: 24) suggests that the form **kałcᶜ* is secondarily influcenced by *kᶜałcᶜr* 'sweet', at any rate rejecting the direct relation between **kałcᶜ* and Gk. γάλα (etc.) because "the development **tᶜ* > *cᶜ* in these dialects [is] exceptional". While a direct development from **kałtᶜ* > **kałcᶜ* does appear to be supported by older scholars like Ačaŕyan (HAB), and certainly cannot be upheld, it is somewhat of a straw man against Martirosyan's analysis, as it goes without mention of Weitenberg's proposal that the affricate is a result of the old nominative ending.

juice from the teats of a cow'), Rasmussen (1999: 621–3), while favouring the comparison of dial. **kałc^{c}* and Gk. γάλα, analyses *kat^{c}n* as an abstract formation **g^{w}h$_1$t-sneh$_2$-*. The close cognate OIr. *bannae* 'drop, milk' (**g^{w}h$_1$t-sn-ieh$_2$-*) forms a perfect semantic parallel (cf. also Olsen 1999: 137).

We can thus leave *kat^{c}n* aside and turn to the question of whether the 'milk'-etymon represented by **kałc^{c}* is inherited or not. Greek ostensibly points to two stems γαλακτ- and γλακτ- (cf. also γλακτο-φάγος 'living on milk (about the Scythians)'. It is not completely clear how this situation should be explained. One opinion is that after the loss of final consonants γλακτ- yielded *γλα which received an epenthetic vowel that spread to the oblique stem γλακτ- ⇒ γαλακτ- (GEW I: 284, van Beek 2022: 447), another is that the variant γαλακτ- represents **g$_{\mathrm{H}}$(l)akt-*, with "Lindeman vocalisation" of the monosyllable (EIEC 381). The former solution appears most elegant to me, but at any rate, the Greek material can probably go back to one original form. The Latin evidence is more problematic. The stem *lact-* would seem to represent **glakt-*, but the loss of initial *g-* is not regular, and needs to be explained via dissimilation. As for the vocalism, Schrijver (1991: 479–80) has argued for a rule **CRDC > CRaDC*. If that is at play here, **(g)lakt-* should represent original **glgt-* with two mediae, a disallowed root structure in PIE. In that case, one might as well pose a non-IE **glakt-* for Greek and Latin, alternating with **g(a)l(ḱ)t-* in Armenian, and perhaps **ǵal(K)-* in Alb. *dhallë*. To the latter we might connect Rom. *zară* 'whey', either as a borrowing from early Albanian or from another neighbouring language (Reichenkron 1958: 81–2).[66]

Conclusion Dial. **kałc^{c}* from non-IE ***gal(ḱ)t-** : ***glakt-** (Gk, It) : ***ǵal(K)-** (Alb).

[66] Proposed cognates in other Indo-European languages are doubtful. Hit. *kalank-* 'soothe, satisfy' and *galaktar-* 'soothing substance, a drug' (Gamkrelidze & Ivanov 1995: 485) is semantically far removed, especially if this is to be derived from a verbal stem **glo-n-ǵ^{h}* 'make weak' of a root **gleǵ^{h}-*, comparable to Li. *glẽžnas* 'weak, soft', ON *kløkkr* 'weak' (Kloekhorst 2008: 428–9). Gamkrelidze & Ivanov's assumption that *galaktar-* denotes a "pleasant-tasting, sweet plant juice" is highly conjectural, although it has been proposed that the noun designates poppy milk (Güterbock *apud* HED IV: 19). The purported Bangani *lɔktɔ* (cited by Schrijver 1991: 480, Rasmussen 1999: 621 fn. 2) was originally reported by Zoller (1988) who claimed its origin in a *centum* substrate, but it is now cast under serious doubt because Zoller used unreliable informants (van Driem & Sharmā 1996).

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iv 46. *կամուրջ kamowrǰ* (*a*) 'bridge' (Hübschmann 1897: 457, HAB II: 502–3, Solta 1960: 424–5, Clackson 1994: 134–5, Olsen 1999: 66, EDA 351–3, J̌ahowkyan 2010: 379).

Proposals Compared with Gk. γέφῡρα 'bridge', Hom. 'dyke, dam; ?beam', Cret. δέφυρα, Boeotian βέφυρα. However, the reconstruction of a shared proto-form is difficult (Clackson 1994: 134–5). A non-IE origin of the etymon has been assumed at least since Furnée (1972: 97 fn. 529, 223, 349), who adduces Hat. *ḫāmuruwa-* 'beam' as a potentially connected form. This view is supported by Puhvel (1976), Beekes (2004, 2010: 269), and Martirosyan (EDA 351–3). The latter author adduces Common Abkhaz **q^{w}ə(m)bələ-ra* 'beam' as a non-IE comparandum and considers Ur. *qaburza** 'bridge' as well as Ge. (Imeruli) *ḳiṗorč̣-* '–plank laid across stream', a lexicographical hapax, to be loans from Armenian (see also ii 59). Beekes (2004: 20) proposes that some variant of Hat. *ḫāmuruwa-* reached Greek through Luwian. Blažek (2023) assumes a cognacy between Ur. *qaburza** and Hu. **kabar-*, **kam(b)ar-*, which he reconstructs on the basis of putative loanwords in Akkadian: Akk. (OB) *kawaru*, (MA) *kabaru*, (NB) *kammar(u)*, *kamru* '(garden) wall, ramp, or similar earth construction'. On account of this, he proposes that the etymon was borrowed from different Hurro-Urartian dialects into Greek, Armenian, and Georgian.

Discussion A striking aspect of the comparison is the identical derivational chain: Arm. **-owrǰ-a-*, Gk. -ῡρα may both reflect **-ur-ih$_2$*. Initial Arm. *k-* and Cret. δ- ostensibly reflect **g^{w}-*, which would also explain why the Armenian reflex does not have a palatalized onset ***č^{c}-*. If true, however, Gk. γε- would have to be explained as the result of dissimilation against the following labial. The Armenian form may then reflect a zero grade **g$^{(w)}$mb^{h}urih$_2$*. At any rate, Arm. *-m-* must either have emerged late, or it reflects an old cluster **-mb^{h}-*, because **-mu-* is usually lenited to *-wu-* (Beekes 2004: 19, cf. Olsen 1999: 792–3). However, a nasal is not reflected in the Greek forms. Additional evidence for the reconstruction of the Armenian form is provided by Ur. *qaburza-ni-li*, where the stem *qaburza** 'bridge', is likely borrowed from PA **kaburǰa-* (Petrosyan apud EDA 353; see ii

59). If true, this demonstrates that Arm. *-m-* is in fact secondary.[67] Viredaz (2007: 10) suggests contamination with Arm. *kamar* 'vault, arch' (← Gk. καμάρᾱ), which seems possible.[68]

The converse assumption of an Urartian loanword in Armenian (Blažek 2023) is also possible *per se*, but the reconstruction of Hu. **kab/mar-* remains hypothetical, and the correspondence of Hu. **-a-* with Ur. *-u-* would be irregular. Moreover, the attested Akkadian forms have a different meaning, and finally, if this etymon was somehow transmitted to Gk. γέφῡρα, it would require a several unexpected sound substitutions. Blažek proposes a contamination with a Gk. *βουφορα (only attested in the form Hsch. βουφάρας· γεφύρας), which would reflect PIE **gʷōu-bʰorh₂-* "carrying the cattle". In reality, this form only shares the labial element with the Homeric form γέφῡρα, so this explanation is not compelling.

Ačaŕyan (HAB II: 503) and Martirosyan (EDA 352) suggest that Ge. (Imeruli) *ḳiṗorč̣-* (lex.) 'plank laid across stream' is borrowed from Armenian, which would provide additional support for assuming that the Armenian word originally contained a medial stop. On the surface, this proposal seems attractive, but the phonological details are unclear. It is not possible to derive the form from "Georg. **kəpurǰ*", and it is not clear why both the Armenian voiced and voiceless consonants would be uniformly replaced by glottalized consonants, nor why Arm. *a* would be replaced by *i*. Therefore, if the Georgian form is connected, it must have been borrowed from an unknown language.

Olsen (1999: 66) suggests that the Greek and Armenian words reflect a PIE **-u̯er-/-u̯en-* stem derived from an otherwise unknown **√gʷebʰ-*. This analysis still requires an explanation for the Greek initial γ- and for Armenian *-m-*. Olsen suggests the latter originated in an unattested verb **gʷe-m-bʰ-* with the nasal infix. Still, this leaves the vowel *a* in *kamowrǰ* unaccounted for. Traditionally, one has resorted to a rule of dissimilatory lowering **e* > *a* caused by

[67] The proposal (EDA 353) that two parallel forms, with and without **m*, could have existed alongside each other is unlikely as it requires the assumption of noteworthy dialectal variation for several centuries (if not millennia) before the literary period, or of the existence of extinct para-Armenian dialects.

[68] On the other hand, if Armenian *-m-* reflects the cluster **-mbʰ-*, which would only have been simplified after the regular lenition **-mu-* > *-wu-*, Ur. *-b-* could be seen as a substitution or graphic replacement for such a cluster. However, there is no evidence to suggest that Urartian does not allow an internal cluster *-mb-* (see Wilhelm 2008: 108).

a following *u* (cf. *vatᶜsown* '60' against *vecᶜ* 'six'; *asr*, *asow* 'wool' < **péku-*; cf. Lamberterie 1978: 271), but this rule is highly questionable in view of *herow* 'last year' (Gk. πέρυσι) and *skesowr* 'mother-in-law' (Gk. ἑκυρά), and it is rejected entirely by Kortlandt (1996: 57), Beekes (2004: 14), and Martirosyan (EDA 353). Thus, the only PIE phoneme that positively would yield Gk. ε and Arm. *a* is a vocalic $*h_1$. If we assume dissimilation of initial $*g^w$- in Greek and a late replacement of internal $*b^h$ by *m* in Armenian, we may thus tentatively pose a quasi-IE reconstruction $*g^wh_1b^hur$-(ih_2-). This form is not explicable in terms of PIE morphology, however. Taking the limited distribution of the term into account as well, it is unlikely to be inherited from an older stage of PIE.

With this in mind, it relevant to note the Abkhaz-Abaza forms adduced by Martirosyan (EDA 352, following Chirikba): Ab. (Bzyp) *a-x̱ʷblarə*, *a-x̱ʷbərlə*, *a-x̱ʷbəlrə*, Abaza (Tapanta) *qʷəmblə* 'cross-beam, beam over the hearth'. These forms reflect Common Abkhaz **qʷə(m)bələ-ra*. The meaning 'beam' matches a potential meaning of Hom. γέφῡρα (cf. Beekes 2004). If the Common Abkhaz word reflects a compound with PWC **bla* 'beam' (Chirikba 1996: 306), it must be inherited, and leaves the possibility that the Greek and Armenian word was borrowed from a West Caucasian source. Hat. *ḫāmuruwa-* 'beam', on the other hand, remains formally distant, and its direct relationship with the Abkhaz forms appears doubtful. The proposal that the Hattic word was transmitted to Greek via Luwian (Beekes 2004) is untenable, as it provides no explanation for the substitution *ḫ-* → $*g^{(w)}$- (see also Simon 2018: 388).

In conclusion, the quasi-IE transposition $*g^wh_1b^hur$-, which we arrived at earlier, comes close to Common Abkhaz **qʷəbələra*. Because the formal match is not exact, we still cannot confirm that the direct source of the borrowing was a West Caucasian language, but there are no geographical or temporal obstructions to this hypothesis if the West Caucasian languages were already spoken at the coast of the Black Sea, and the predecessors of Greek and Armenian in the adjacent steppe area.

Conclusion Non-IE $*\mathbf{g^wh_1b^hur}$- (Arm, Gk). Perhaps from a West Caucasian language.

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IV 47. **կասկ** *kask* 'chestnut', *kaskeni* 'chestnut tree' (Hübschmann 1897: 166, 394, HAB II: 533, EDA 353, J̌ahowkyan 2010: 387).

Proposals Since long been compared with Gk. κάστανον 'chestnut', καστανέα (→ Lat. *castanea*) but the initial *k-* (rather than *kʿ-*) is irregular. Already Hübschmann (1897: 394) groups it among loanwords of uncertain (alternatively Iranian) provenance (cf. also GEW I: 799 "wohl kleinasiatisch", J̌ahowkyan 1987: 310, Beekes 2010: 655, EDA 353).

Discussion Apart from the initial *k-* the final *-k* is problematic. Furnée (1972: 389) treats it as a potential example of a substratal alternation of **k* and **t*, which is not satisfactory. A more compelling explanation is given by Martirosyan (EDA 353, 2013: 114) who posits a back-formation from *kaskeni* < **kastkeni*, itself composed of diminutive **kast-u/ik* and the highly productive tree suffix *-eni*. As a parallel, he adduces dial. **hačar-k-i* 'beech tree'.

Since even an early loan from Greek would probably yield ***kastan* (cf. the later *kastanay* 'chestnut'), the Greek and Armenian words must both reflect a borrowing from an unknown third language. Initial Arm. *k-* suggests that the borrowing postdated the sound shift, but an alternant **gast-* with voiced onset cannot be excluded as an alternative option.

Conclusion Non-IE ***Kast-** (Arm, Gk)

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IV 48. **կարբ** *karb* 'a tree' (HAB II: 547, EDA 353, J̌ahowkyan 2010: 391). Attested only in an unknown medical dictionary according to Ališan (1895: 306), who proposes the meaning *kałamax* 'poplar, aspen'.

Proposals J̌ahowkyan (2010: 391) glosses the word with *tʿxki* (maple) and states that it is borrowed from NP *karb* 'a kind of maple'.

Martirosyan (EDA 353) adduces Ru. *grab* 'hornbeam', Li. *skrúoblas* 'hornbeam', *skiřpstas* 'elm', Lat. *carpinus* 'hornbeam', and (hesitantly) Hit. *karpina-* 'a tree', posing a substrate origin on account of the irregular phonological correspondences.

Discussion The Slavic forms (Ru. *grab*, Pol. *grab*, SCr. *grȁb*, *gàbar*, Cz. *hrab*, *hrabr* etc.) have been taken to reflect **grabrъ* 'hornbeam' with dissimilatory loss of one or the other **r* (ÈSSJa: VII: 99–100). The Slavic forms with acute accent point to a quasi-IE **gro/abr-*, while the Armenian form must reflect **gabʰr-*. Either the first **r* was dissimilated independently in Armenian, or there was an underlying alternation of **grab⁽ʰ⁾-* ∞ **gab⁽ʰ⁾r-* in the donor language.[69]

The Slavic forms have been compared with a range of "Balkanic" forms, namely Mac. γράβιον 'torch, oakwood', Modern Gk. (Epirus) γρᾶβος, (Arcadia) γάβρος 'oak' as well as the Umb. theonym *Grabovius* (Porzig 1954: 148). Hsch. γοβρίαι· φανόι, λαμπτῆρες undoubtedly belongs here as well (Furnée 1972: 169, Beekes 2010: 284). It is unlikely that the Arcadian form γάβρος independenly underwent metathesis from γρᾶβος (*pace* Furnée). Considering the parallels for the alternation **grVb-* and **gVbr-* found in the Slavic and Armenian material, the "Balkanic" forms support the assumption of a substratal form **grVbr-*.

Matasović (2023) considers Lat. *carpinus* 'hornbeam' and Hit. *karpina-* to be unrelated. The Latin form has mostly been derived from **√(s)kerp-* 'pick, pluck, cut' (Walde-Hofmann I: 171–2, Schrijver 1991: 430, de Vaan 2008), explained due to the serrated shape of the hornbeam leaves. This root etymology appears arbitrary on the semantic side. Considering the phonological similarity and identical meaning of the Latin and Slavic forms, it is difficult to conclude that they are entirely unrelated.

NP *karb* is glossed by Dehkhoda as 'one of the species of maple tree abundant in the forests of Northern Iran'. It is not attested in Classical Persian, which may suggest that it is a recent loan from Armenian. This would show that the meaning of the Armenian word is not 'poplar, aspen', but rather a species of maple, perhaps 'field maple' (*Acer campestris*), whose native habitat encompasses the forests of Northern Armenia and extends into Northern Iran.

[69] The Baltic forms Li. *skrúoblas*, *skróblis*, *skrõblas*; Ltv. *skābardis* 'red beech' and OPr. (EV) *stoberwis* 'Haynbuche' (if for **skoberwis*) are most recently compared by Matasović (forthcoming), who reconstructs Balto-Slavic **(s)g⁽ʰ⁾rob-*, assuming a non-IE word, and adducing also Alb. *shko-zë* 'hornbeam' (following Jokl), which presupposes a proto-form **skēbʰ-*. Both the Baltic and Albanian forms are too formally distant, however, and best left aside. OPr. (EV) *wosi-grabis* 'Spilböm' can be a Slavic loanword (Matasović forthcoming).

Conclusion Non-IE *__gab^{h}r-__ (Arm) : *__grabr-__ (Sl, Gk) : *__karp-__ (It)?

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IV 49. *կաղիճ karič* (*a*) 'scorpion' (HAB II: 551, Olsen 1999: 462, 939, EDA 354–5, J̌ahowkyan 2010: 392).

Proposals Ačaŕyan (Ačaŕyan (HAB) II: 551) compares Gk. κᾱρίς, -ίδος (κουρίς, κωρίς) 'shrimp, prawn (and other small crustaceans)', assuming independent borrowings from a language of Asia Minor or the Mediterranean (cf. Beekes 2010: 645). Olsen (1999: 939) offers no etymology.

Martirosyan (EDA 355, 2013: 114) reconstructs quasi-IE **karid-i̯eh$_2$-*, and assumes that the borrowing took place after the Armenian consonant shift, thus evading the shift of initial **k* > *k^{c}*. Further (EDA 375), he compares Arm. *kor* (*i*/*a*), dial. **korč* 'scorpion', assuming a substrate alternation **o* ∞ **a*.

Discussion As for Martirosyan's reconstruction **karid-i̯eh$_2$-*, the development of the cluster **di̯* > *č* is attractive phonetically but cannot be backed by undisputed examples. At the same time, there are quite a few strong examples in favour of a change of **di̯* > *c* (see Kocharov 2019: 32–8 with references). As support for the reflex *č*, it can be claimed that this change is more likely, as it would be parallel **d^{h}i̯* > *ǰ*, which is undisputed (cf. *mēǰ* 'middle' < **med^{h}i̯o-*). However, an asymmetrical change of the **Ti̯* clusters cannot be *a priori* excluded.[70] More importantly, if *karič* was borrowed posterior to the Armenian sound shift, as suggested by the correspondence of Arm. *k-* with Gk. κ-, it is difficult to understand why the voiced cluster **-di̯-* still ended up as a *voiceless* affricate.

On the basis of these two objections, it is better to analyze *karič* as containing the suffix *-ič*, often associated with (often stinging or prickly) fauna and flora (Greppin 1975: 96–7, Olsen 1999: 462–3; cf. also *k^{c}owpič* (IV 85). In that way, the two homosemes *kor* and *karič* can be brought even closer together. The vocalic difference may be

[70] If the development of these clusters took place after the sound shift, then **t^{h}i̯* > *c^{c}*, **ti̯* > **c* and **di̯* > *ǰ* would be very similar to the way such clusters developed from Latin to Italo-Romance, e.g. *dūritia* > *durezza* 'hardness' with [ʦ], but *hodiē* > *oggi* 'today' with [ʤ] (Olsen 1988: 12).

explained by the rule (Pedersen 1900: 99, Kortlandt 1983b: 10) that **o* yielded *a* in initial, open syllables unless followed by Arm. *o* or a reflex of PIE **u̯* (cf. also *aṙowoyt*, IV 8). Because this rule did not apply to syllables that had become closed after the apocope of pretonic **i* and **u* (e.g. *ozni* 'hedgehog' < **ozini*), it must have operated at a very late point in time. Thus, *karič* can easily reflect earlier **korič*, and it is unnecessary to assume a substratal alternation **o* ∞ **a* for the Armenian forms. Nevertheless, such an alternation must still underlie the Greek variants κουρίς/κωρίς vs. κᾱρίς.

According to Ačaṙyan (HAB II: 551, 644), *kor* 'scorpion' is derived from the adjective *kor* 'crooked'. This has a strong air of folk etymology. Martirosyan (EDA 705–6) proposes that *kor* 'scorpion' is a borrowing from a donor form related to *karič*. If the latter is a derivation of the former, this becomes easier to understand. In that case, *kor* is most likely a late borrowing, most closely comparable to Gk. κωρίς. Since the Greek and Armenian words are semantically dissimilar, a direct loan from Greek can be excluded; the donor must have been an unidentified language of Asia Minor.

Conclusion Non-IE ***kor**- (Arm, Gk) : ***kār**- (Gk)

* * *

IV 50. **կոստղ** *kostł* (lex.) 'twig on which a sticky substance, birdlime is smeared'; *kostłi* (St. Roška, 18th c., Ališan 1895: 330) 'holly, holm-oak (?)' (HAB II: 639, EDA 371–2, J̌ahowkyan 2010: 421).

Proposals Martirosyan (EDA 372) proposes a connection with Sln. *kostílja* 'nettle tree, hackberry (*Celtis australis*)', ORu. *kostýlъ* 'rod, stick or spike with a curved edge', suggesting a more recent substrate word evading the shift of *k* > *kᶜ*. J̌ahowkyan (2010: 421) proposes a derivation from "**gʷosodo*-" (*sic*, presumably for **gʷosdo*-), comparing Alb. *gjethe* (PL tant.) 'foliage, green branches'; OHG *quest* 'tuft of leaves', Da. *kost* 'bunch of twigs, broom'; SCr. *gvȍzd* 'forest'.

Discussion None of the existing etymologies are compelling. The plants holly and hackberry have little in common apart from carrying berries, and hackberries are edible while holly berries are

poisonous. The derivation from **g^{w}osdo-* is impossible, because the final *-ł* cannot be explained.[71]

The issue is complicated by the late attestation of the form *kostł(i)*. The form *ostł* is attested earlier and probably shows the influence of *ost* 'branch' (= Gk. ὄζος). The forms *kɔstł* and *vɔstł* appear in the general meaning 'branch' in the Ararat dialect, probably showing a converse contamination (EDA 534). Formally, *kostłi* resembles a derivation of *kostł* with the tree-suffix *-i*. Semantically, this would be understandable because bird-lime is often prepared with the bark of the holly tree (EDA 371). However, it cannot be excluded that *kostł* represents a back-formation from the tree name *kostłi*.

Despite these issues, we can tentatively adduce the following group of words for 'holly' in Western and Southern Europe: Gk. κήλαστρος; OHG *hul(i)s*, Middle Du. *huls* (< **hulisa-*); OIr. *cuilenn*, We. *celyn* (< **kolinno-*); Sardinian (reflecting a Pre-Romance substrate) *golosti*, *colostri* and Basque *gorosti* (< **golosti*). This cluster doubtlessly reflects an areal word of non-IE origin and the Armenian form is both formally and semantically close. The form *kostł(-i)* can reflect **gostil-*, which would represent a metathesized variant of ***golist-*.[72]

Conclusion Uncertain. Perhaps non-IE ***gostil-** (Arm) : ***kēlas-tr-** (Gk) : ***kulis-** (Gmc) : ***kolis-no-** (Celt) : ***golos-** (Pre-Rom., Bsq)

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IV 51. ***կոր*** *kori* (Severian) 'irrigation channel, drain'; in Faustos: *kori mi getin* 'a bit of earth' (HAB II: 648, J̌ahowkyan 2010: 423).

Proposals Lidén (1906: 111) considers it a derivation from *kor* 'curved, crooked'. This is rejected by Ačaṙyan (HAB II: 648) who offers no alternative etymology. The adjective *kor* is universally

[71] It could hardly have arisen from contamination with *astł* 'star' or *kočł* 'trunk'. Hit. *ḫašduer-* 'twigs' probably does not reflect an old heteroclitic stem and may be entirely unrelated (Kloekhorst 2008: 326–7).

[72] Considering the weak attestation of the word, is it possible that it was contaminated with *ost* 'branch'?

taken to reflect **gouHro-* from a root **geuH-* 'bend, curl' (cf. Olsen 1999: 199), potentially matching Nw. *kaure* 'curled chip (from a wood plane)' (**kaura-*), cf. ON *kárr* 'curly hair' (**kauera-*), and further related to Gk. γῡρός 'curved, round', Arm. *kowr* 'boat' < **guHró-*.

Martirosyan (2013: 114) offers an alternative etymology for *kori*, adducing Gk. γοργύριον (Spartan inscr.) 'subterranean channel', γόργῡρη (Herodotus), γεργῡρα (Alcman) and Corcyrean (inscr.) κορχυρέα 'underground drain, sewer'. These are no doubt foreign words in Greek (Furnée 1972: 118, Beekes 2010: 283–4). Arm. *kori* would then reflect a non-IE **gorio/a-* without the reduplication syllable seen in Greek.

Discussion If Martirosyan's comparison with Gk. γόργῡρη etc. is correct, the Armenian word may also go back to **gurio/a-* with umlaut **u* > *o* triggered by the following *i* (Meillet-Olsen's dissimilation). Semantically, the comparison is attractive, but the formal details are difficult. The lack of a reflex of the first syllable in Armenian may be understood if the Greek forms are considered reduplications, but none of the attested forms have matching vowels, making this analysis problematic. It is more likely that the Greek forms reflect a foreign word of the shape **KVrK-* with the Pre-Greek suffix **-ur-* Beekes 2010: 284.

Lidén's suggestion that *kori* 'drain, channel' is instead derived with the suffix *-i* from *kor* < **gouh$_2$ro-*[73] is semantically weak but difficult to reject. MHG *kule* 'pit, depression' < **guH-lo-* and Gk. γύαλον in the plural sense 'vales, dells' may show a faintly similar semantic development, but it is not exact. In sum, the etymology of the word is uncertain.[74]

Conclusion Uncertain. Perhaps from *kor* 'curved' < **gouh$_2$ro-*.

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[73] The reconstruction of **h$_2$* in this root is supported by Gk. γύαλον (n.) 'hollow'.

[74] An interesting attestation of Arm. *kori* is found in Faustos, where the phrase *kori mi getin* 'some soil' may suggest a meaning 'handful', cf. Ciakciak 796, who offers the gloss 'un palmo (di terra)'. It is tempting to compare this meaning to that of YAv. *gauua-* 'hand', if this reflects **g$^{(w)}$ouH-o-*. However, the Avestan word is usually assumed to reflect **gaβa-*, allowing a derivation from **√g^{h}ab^{h}-* 'take', cf. Skt. *gábhasti-* 'hand'.

IV 52. հաստ *hast* (adj., *i*) 'firm, solid, thick', *hastem* 'affirm' (Hübschmann 1897: 464, HAB III: 49, Solta 1960: 439–40, Olsen 1999: 201, EDA 390–1, J̌ahowkyan 2010: 449).

Proposals The word is cognate with ON *fastr*, OS *festi* 'firm, solid'. The limited distribution and apparent presence of PIE **a* leads Salmons (*apud* EIEC 204) to consider this etymon a non-IE loanword. Martirosyan (EDA 391) comes to a similar conclusion, comparing also Skt. *pastyá-* (after Uhlenbeck) and adduces Arm. *hast-at-em* in the sense 'build, settle'. He therefore proposes "a substratum technical term with an original meaning 'foundation, settlement, fortified dwelling place, fortress'".

Discussion Semantically, the strongest comparison is clearly between the Armenian and Germanic forms, which can both reflect **pHst-*. While the Germanic forms could theoretically reflect **post-*, this would yield Arm. ***host*. Therefore, the Armenian and Germanic forms are best kept apart from Skt. *pastyá-*, unless we assume a PIE **a*, like Salmons, who interprets this as sign of a non-IE loanword. However, on semantic grounds, the comparison with the Sanskrit word is not obvious, and different analyses are possible (see EWAia II: 111).[75] The formal identity of the Armenian and Germanic forms is not certain. While the reconstruction of a verbal compound **ph$_2$ǵ-sth$_2$-o-*, based on **√peh$_2$ǵ-* 'make firm' and **√steh$_2$-* 'stand', is a possible starting point for both languages (Kroonen 2013: 131), the Armenian form more plausibly reflects a past participle **ph$_2$ḱ-tó-* 'made firm' (Olsen 1999: 201).

There is little basis for the assumption of a substrate word **past-* in Armenian, Germanic, and Sanskrit as assumed by Salmons and Martirosyan. The distribution of the forms is non-contiguous and the semantics are very basic and not typical of a loanword. The assumption (EDA 391) that the root originally meant 'foundation, settlement' (etc.) is also problematic, because the full range of meanings from 'firm' to 'build' is not attested in a single language.

[75] Kroonen (2013: 131) suggests a compound **h$_2$po-sth$_2$-io-* 'up-standing'. This may allow for a comparison with Lat. *postis* for which de Vaan 2008: 484 reconstructs **po-sth$_2$-i-* (rather **h$_2$po-sth$_2$-i-*). De Vaan assumes that the Germanic words belong here as well, but on semantic grounds, the comparison with Arm. *hast* is more convincing.

Moreover, the range of meanings of Arm. *hastatem* 'affirm, sustain, consolidate, fortify, strengthen, found, erect, create' (etc.) can all be easily understood as based on *hastat* 'solid, firm, stable; surely, truly' (never *'settled, built').

Conclusion Probably PIE *$ph_2ḱtó$-.

* * *

iv 53. ՀԵՂ *hec^c* (gen.sg *hec^{c}i*) or *xec^c* (in Eznik and dial. [Salmast]) 'felloe, rim of a wheel' (HAB III: 89, EDA 407–8, J̌ahowkyan 2010: 459)

Proposals No serious proposals are offered in the older literature. Martirosyan (EDA 407) assumes a reconstruction *$pelḱ$-$sḱ$- or a root noun *$pelḱ$-*s* and compares PGm. *$felgō$- 'rim of a wheel' (OE *fealg*, *OHG felga*). From the outcome *$heɫc^c$, he assumes that the lateral was lost before an affricate, giving as a parallel the dialectal word *$powc^c$ 'vulva', which is compared to Skt. *buli-* 'anus', *buri-* 'vulva' and Li. *bulìs* 'buttock'. On the one hand, he implicitly assumes that the word *$pelḱ$- is of non-IE origin, including it in the discussion of substrate words (EDA 807, Martirosyan 2013: 122); on the other, he mentions the possibility that the root is related to the verbal root *$\sqrt{plek}$- 'plait, weave' (cf. LIV^2 486). As another alternative, he mentions that the word may be identical to *xec^c* 'shell' if from an original meaning 'turning, twisting'.

J̌ahowkyan (2010: 459) compares Skt. *pakṣá-* 'wing, side' and reconstructs a thematicized *s*-stem *pek-*s*-°.

Discussion Both of the proposed etymologies are contradicted by the early attestation of the form *xec^c* in Eznik, because the spelling alternation of initial *h-* and *x-* is unexplained if the word was borrowed before the historical period. The comparison with PGm. *$felgō$- (if < *$pelḱ$-$éh_2$-) relies on a change *$heɫc^c$ > *hec^c*, but the putative sound change *$ɫc^c$ > c^c has no solid support. In particular, the comparison between the dialectal word *$powc^c$ and Li. *bulìs*, Skt. *bul/ri-* is doubtful, as it would imply a PIE **b*. These forms, all attested late and/or sparsely, may well have a sound symbolic character. The other example is *kat^{c}n* (iv 45), which is assumed to represent the original accusative *$glKtm$, matching Arm. *$kaɫc^c$. But

it does not contain an affricate, and the form **kałc^{c}* itself casts doubt on the putative sound change, reducing it, at best to a dialectal development. Well-attested words like *k^{c}ałc^{c}* 'hunger' and *k^{c}ałc^{c}r* 'sweet' were not affected in any dialects, however. Consequently, the comparison with **felgō-* cannot be maintained. Assuming that the Germanic word reflects **pelǵ^{h}-*, it can instead be compared to Sln. *plâz* 'plough sole', Ru. *póloz* 'sled runner' < **polǵ^{h}-* (Kroonen 2013: 134–5).

J̌ahowkyan's comparison with Skt. *pakṣá-* does not convince, as the Sanskrit form should not be separated from the *s*-stem Skt. *pā́jas-* 'side, surface' < **peh$_2$ǵ-os-*, from the root **√peh$_2$ǵ-* 'be(come) firm' (LIV^{2} 461), cf. Lat. *pāgina* 'side, sheet of paper', Gk. εὐ-πηγής 'well-built' (EWAia: II: 116). The laryngeal was probably lost before media and another consonant in Indo-Iranian (Lubotsky 1981) but not in Armenian, where we would thus expect ***hac^{c}* (cf. also *hast* 'firm' from the same root; IV 52).

In sum, the word has no etymology. The internal variant *xec^{c}* makes it likely that the word is a more recent loan, but the donor cannot be identified.

Conclusion No comparanda.

* * *

IV 54. ⳁⳉⳋ *jag* (*u*) 'young of an animal, small bird, sparrow' (Hübschmann 1897: 185, HAB III: 141–2, Olsen 1999: 110–1, EDA 427–8, J̌ahowkyan 2010: 473).

Proposals Hübschmann (1897: 185) considers it a loan from Iranian, adducing NP *zāq* 'young of an animal' (cf. IEW 409). Pedersen (1900: 338) considers the Armenian and Persian forms to be direct cognates and compares also Alb. *zog* (*-u*) 'bird, nestling; (dial.) young of an animal' (folllowing G. Meyer 1892: 18). Ačaṙyan (HAB II: 141) adduces Sogd. *z'k* 'child' and the aforementioned NP *zāq*. Martirosyan (EDA 427–8) also adduces MP *z(')hk*, ManMP, Pth. *zhg*, NP *zah* 'offspring' and reconstructs a substrate word **ǵ^{h}āg^{h}-*. Huld (1984: 135–6) likewise assumes a set of "culture-words".[76]

[76]However, Huld bases this mainly on Jucquois (1965: 445), who assumes that the donor is "turc **çog* qui est la base de *çoglan*, « garçon, jeune », avec le suffixe

Discussion The Armenian word cannot have been borrowed from Iranian, as the result would have been ****zag*** (Pedersen 1900: 338). The comparison with Alb. *zog* is compelling, but the reconstruction ***ǵʰāg⁽ʷ⁾ʰ-***, advanced by most scholars (e.g. IEW 409, EDA 428), would have yielded Alb. *****dog***, so it is necessary to reconstruct quasi-IE ****ǵʰuāg⁽ʷ⁾ʰ-*** with the same initial cluster (or affricate?) as in Arm. *jayn* 'sound, voice', Alb. (G) *zâ* (def. *zâni*) 'voice', OCS *zvonъ* 'noise' (Demiraj 1997: 430, Schumacher & Matzinger 2013: 236). This invalidates the comparison with MP *z(')hk* and its relatives (including Sogd. *z'ɣ*, Bal. *zahg* 'child'), where the loss of ****u̯*** would be unexpected. In any case, the Iranian forms must reflect **zaha-ka-* where **zaha-* probably reflects **zanha-*, a secondary thematicization of the PIE *s*-stem **ǵenh₁os-*, Skt. *janas-* 'race' (Korn 2005: 184 fn. 41).[77]

The evidence thus points to an Armenian-Albanian isogloss ****ǵʰu̯āg⁽ʷ⁾ʰ-***. The root structure is clearly unusual and the semantics typical of a loanword, but given its onomatopoeic character (cf. Olsen 1999: 111 fn. 231), it is difficult to prove that the word has a foreign source.[78]

Conclusion Non-IE ****ǵʰu̯āg⁽ʷ⁾ʰ-*** (Arm, Alb)

* * *

dit collectif *-lan*, repris ensuite par le gr. mod. τσογλάνι". This hypothesis is severely misguided, however, as neither ****çog*** nor a suffix *****-lan*** exists in Turkic. The actual form is Turkish *oğlān* 'boy, servant', derived from *oğul* 'child' with a now fossilized plural suffix *-ān* (Clauson 1972: 83–4). MoGk. τσογλάνι 'young scoundrel' is borrowed from Turkish *iç-oğlan-ı* 'servant', composed with *iç* 'inside', thus lit. 'inside boy' (Andriōtēs 2001).

[77] Other derivations of Ir. **zaha-* include NP *zahdān* 'womb' < **zaha-dāna-* lit. 'child-carrier', Yidgha *zəmŏ̊n* 'child' (Klingenschmitt 2000: 201). NP *zāq* 'young of an animal' may be an Arabic backloan of an unattested NP **zāg* or it may be from an East Iranian language (cf. Klingenschmitt 2000: 201 fn. 32); cf. also Syr. *zagā* 'chicken', Ge. *zaki* 'young of an animal'. It is probably unrelated to NP *zāɣ* 'crow, raven, rook' (Hübschmann 1897: 185), which may belong to the same root **zag* 'to sound' as YAv. *zaxšaϑra-* 'libel, slander' (see Cheung 2007: 460).

[78] We might note the striking formal and semantic resemblance with a number of Nakh-Daghestanian words, viz. Tab., Agul *žaqʷ* '(small) bird', Hunzib *čeq* 'bird', Ch. *mož-žaq* 'a kind of small bird' (with *mož* 'yellow'). If these forms are relevant, we might assume that the Armenian and Albanian words were borrowed in the form **ǰu̯āg-* as an intermediate step in the treatment of the palatal stops (cf. Kortlandt 1986: 40, Schumacher & Matzinger 2013: 236).

IV 55. ձաղկ *jałk* (*a*) 'rod, stick' (Hübschmann 1897: 469, HAB III: 143–4, Solta 1960: 314–5, EDA 429–30, J̌ahowkyan 2010: 473).

Proposals Compared to Go. *galga* 'stake, pole', ON *galgi* 'gallows'; Li. *žalgà*, *žálga* 'pole, perch'. The Baltic and Germanic forms point to **ǵʰolgʰ-*, while the Armenian form points to **ǵʰlg-*. Therefore, one has assumed either (1) an inexplicable PIE alternation of **g* and **gʰ* (Pedersen 1906a: 361, EIEC 442), (2) that Arm. *k* was taken over from a GEN.SG **ǵʰlg-n-és* against NOM.SG **ǵʰolgʰ-* (Petersson 1921: 155), (3) alternating root extensions of primary **ǵʰel-*, seen in Arm. *joł* 'bar, perch, pole', Li. *žúolis* 'piece of wood', Skt. *hala-* 'plough' (Solta 1960: 314–5), or (4) an Armenian "determinative" suffix *-k-* with a change of **jałg-k-* > *jałk* (EDA 429 with references). However, Martirosyan (l.c.) rather assumes a European substrate word on account of the limited distribution and potential presence of **a*.

Discussion Martirosyan (EDA 429) considers the relationship with Arm. *joł* 'bar, perch, pole', Li. *žúolis* 'piece of wood', and Skt. *hala-* 'plough' to be possible, but there is no PIE suffix **-gʰ-* or **-g-* which would enable this relationship, and one would instead have to resort to the outdated assumption of root extensions.[79] There is no basis for the reconstruction of a paradigm **ǵʰolgʰ-*, **ǵʰlgnés* as assumed by Petersson. The assumption of a **-∅-/*-n-* heteroclitic and facultative loss of aspiration, is unfounded. Since an alternation of **g* and **gʰ* within PIE is unacceptable, only a few options seem to remain.

Lithuanian has forms both with and without an acute in the first syllable, and it is not possible to decide whether quasi-IE **ǵʰo/algʰ-* or **ǵʰo/alg-* is the original form. Therefore, the Lithuanian forms can either be compared directly with the Germanic or the Armenian forms, but not with both (Smoczyński 2018: 1713–4). The comparison with Germanic is more attractive for geographic reasons, and

[79] The comparison between these forms, and further to the Arm. hapax *jlem* 'to furrow', is already problematic. Li. *žúolis* has an acute which would point to **ǵʰoHl-*, but Skt. *hala-*, if inherited, must reflect **ǵʰel-*. The Sanskrit word is, however, attested very late and may be a Proto-Munda loanword (Kuiper 1948: 127–8, KEWA III: 584). Arm. *joł* has *ł* which must go back to **lC*. Martirosyan (EDA 437) suggests a paradigm **ǵʰoh₁-ōl*, **ǵh₁-el-*, but it is unclear which kind of analogical replacement he assumes for Arm. *joł* which must reflect a short **o*. Moreover, the suggestion does not solve the problem of *-ł*.

it does not require the reconstruction of **a*. On the other hand, the Armenian word is formally and semantically extremely close, and is difficult to dismiss. Given the restricted distribution and lack of any potentially related verbal roots, the inescapable conclusion is that this etymon reflects a non-IE loanword.

Conclusion Non-IE ***ǵʰalg**- (Arm) : ***ǵʰo/algʰ**- (Balt, Gmc)

* * *

iv 56. ***մարկեղ*** *markeł* (*a*) 'hoe, mattock' (Hübschmann 1897: 364, HAB III: 284–5, J̌ahowkyan 2010: 517).

Proposals Usually considered a loan from Gk. μακέλη, μάκελλα 'mattock' (Hübschmann 1897: 364). However, Furnée (1979: 30) treats these forms, as well as Ge. *margli* 'hoe', *v-margli* 'to weed', as borrowed from a third language (cf. also Beekes 2010: 894, without the Kartvelian forms).

Discussion The Armenian form shows an unexplained additional *-r-* which reappears in the Georgian form. Unless an *ad hoc* contamination between the Greek and Georgian forms is assumed, it is difficult to assume that the Armenian word was borrowed from Greek or any known language (cf. Vogt 1938: 334).[80] The Greek word, at any rate, must be foreign given the alternation of -ελλα and -έλη and the potentially related Hesychian forms μάσκη, βάσκα, and μάκκορ, all 'mattock' (Beekes 2010: 334). The comparison appears to show a substrate alternation of **-sk-*, **-rk-*, and **-k-*. Because Arm. *-k-* corresponds to Gk. -κ-, the borrowing into Armenian may have postdated the Armenian sound shift. Given the Georgian form with **-g-*, however, it is also possible to assume an idential input **marg°* in Armenian.

[80] Hübschmann (1897: 331) offers two other examples of an irregular epenthesis of *-r-* in Greek loanwords. The first example, *gramartik*(*os*) 'grammarian' is clearly a borrowing from Gk. γραμματικός, but the epenthesis may have been provoked by the first *-r-*. The second example is the name *Barseł*, *Barsił*, which is assumed to reflect βασίλειος 'king'.

Conclusion Non-IE ***marg-el(l)**- (Arm, ?Ktv) : ? ***mask**-, **mak-el(l)**- (Gk)

* * *

IV 57. **մեղեխ** *meɫex* (*o*) 'handle (of an axe), haft' (HAB III: 299, EDA 460, J̌ahowkyan 2010: 522).

Proposals Ačaṙyan (HAB III: 299) provides no etymology. Martirosyan (EDA 460) derives the word from an unattested **meɫ*(*i*) 'ash tree', comparing Gk. μελία 'manna ash, ashen spear' and treating these as reflecting a Mediterranean substrate word. Fournet (2013: 10) compares Hu. *malladi*, glossing it 'chopping board' and assumes a verbal stem **mal*- 'chop'.

Discussion The Arm. final -*x* does suggest a foreign origin, and according to J̌ahowkyan (1987: 355), it indicates that the word is Hurro-Urartian. No obvious Hurro-Urartian comparanda present themselves, however. Hu. *malladi* rather means 'bowl' (BGH 240) and cannot be compared. Moreover, the substitution of Hu. *a* for Arm. *e* is irregular. The etymology of Martirosyan is slightly better, but the question of the suffix -(*e*)*x* remains problematic, since there is no evidence that it was ever productive. Moreover, Arm. -*ɫ*- lacks an explanation, as it cannot regularly reflect intervocalic *-*l*-.

Conclusion No comparanda.

* * *

IV 58. **մոզի** *mozi* 'bullock, steer; (dial.) calf' (Hübschmann 1897: 475, HAB III: 338, Solta 1960: 319–20, Clackson 1994: 152–4, J̌ahowkyan 2010: 532). First attested in Grigor Magistros, Commentary on Dionysos Thrax (11th c.). Widespread in the dialects.

Proposals Compared to Gk. μόσχος 'young cow, heifer, calf; offshoot of plants', μοσχίον 'young calf'. The latter form, presupposing **mosǵʰ-io*- is ostensibly a perfect match of the Armenian form. The Greek word has, on the other hand, been compared to Li. *mãzgas* 'bud' on the assumption that the meaning 'offshoot' is older

in Greek. Solta (1960: 319–20) compares all three forms. Due to the late attestation of the Armenian word and the preference for other words for bovines in the Classical literature, Clackson (1994: 152–4) is more inclined to assume that the Armenian word was borrowed from Greek. Furthermore, he is sceptical of the presumed sound change *-*sǵʰ-* > *-z-*. Martirosyan (2013: 115) excludes other cognates and considers the Greek and Armenian words to reflect a shared, Mediterranean loanword.

Discussion The Armenian word cannot be a loan from Greek (*pace* Clackson), as the reflection of -σχ- as *-z-* would be unexpected, compare Arm. *pask^{c}a* 'Passover' ← πάσχα. Beekes (2010: 970–1) is sceptical of the comparison altogether because the singular attestation of the Greek word in Homer shows a meaning 'young (shoot)'. The meaning 'young bovine' occurs in Herodotus and Euripides (5th c. BCE) while 'offshoot of plant' reappears in Theophrastus (4th c. BCE). Based on only one epic attestation, it cannot be concluded that the polysemy does not go further back in time. Furthermore, it is unnecessary to assume the unusual semantic change 'shoot' > 'young bovine' if the polysemy was shared by both the Greek and Armenian forms and the former meaning was simply lost in Armenian. This is thus not a serious obstruction to the comparison. As for the purported cognate Li. *mãzgas*, it is more likely an independent derivation of *mègzti* 'knot' (GEW II: 256).

I would thus assume that this etymon is exclusive to Armenian and Greek. Its origin may well be non-IE on account of the very narrow distribution as well as the semantics. Assuming that the word was borrowed independently into Greek and Armenian, we can better explain some of the formal issues presented. Firstly, because *o* is in a synchronically open syllable, it is unexpected that it has not passed to *a*. Martirosyan (2013: 115 fn. 129) assumes that the syllable was actually closed when this change took place, thus assuming an earlier **mozz-*. This is unacceptable, since the existence of phonologically distinctive geminates is completely indemonstrable at any stage in the development of Classical Armenian, and because **o* > *a* is a very late change, postdating even the syncope of unstressed high vowels (Kortlandt 1980: 105). Instead, I assume that the vocalism was maintained or generalized on the basis of an unattested **moz* (< **mosǵʰo-*), or simply that

the addition of the diminutive suffix *-i* was later than the change of **o* > *a*. Alternatively, in view of the foreign origin of the word, it is conceivable that the Armenian form actually goes back to **musǵʰ-io-* or **mōsǵʰ-io-* and underwent the Meillet-Olsen dissimilation, i.e. **muzi* > *mozi*.

Clackson also raises the problem of the sound change **VsǵʰV* > *VzV*, which is not supported by other evidence. It is not contradicted by any examples either. Examples of a development **-sK-* > *-cᶜ-* involve either voiceless palatals or voiced velars (cf. *erēcᶜ* 'elder' < **preis-gʷh₂-u-*, *harcᶜ-anem* 'ask' < **prḱ-sḱ-*). Thus, it cannot be excluded that a cluster **-sǵʰ-* would develop along the lines of **-zǵʰ-* and that a subsequent cluster **-zj-* (vel sim.) was simplified to *-j-*, becoming later *-z-* between vowels.[81] On the other hand, it could be assumed that the Armenian input form was rather **moǵʰ-*, on the strength of the alternation **VC* ∞ **VsC* seen in other words of substrate origin. Coupled with the possiblity of reconstructing **u*/*ō*, this means that the Armenian form potentially shows two irregular alternations. However, since the reconstruction of such an alternation is not directly demanded by the material, the most economical assumption is that the Armenian and Greek words continue a common proto-form and thus reflect a shared borrowing.

Conclusion Non-IE ***mosǵʰ-** (Arm, Gk)

* * *

IV 59. մոր *mor* 'blackberry', early attestations mostly *mor-eni* 'bramble' (Hübschmann 1897: 394, HAB III: 347, Solta 1960: 320, Olsen 1999: 412 fn. 446, EDA 474–8, J̌ahowkyan 2010: 535).

Proposals Usually compared to Gk. μόρον 'blackberry, black mulberry', Lat. *mōrum*, and sometimes We. *mer-wydden* 'mulberry, blackberry' (with *gwydden* 'tree'). Hamp (1973) compares additional Celtic forms that reflect **smiar-*, viz. OIr. *smér*, We. *mwyar*, Breton *muyar*, and assumes a substrate word related to "Mediterranean"

[81] Circumstantial evidence is provided by the fact that the cluster **-ǵʰs-* seems to have the same outcome in *merj* 'near' < **me ǵʰsri* 'at hand', cf. Gk. μέχρι 'as far as, until' (Kortlandt 1985b: 10), but it is possible that **s* was lost earlier in this word due to its position between two consonants.

*(*s*)*mŏr*-. Martirosyan (EDA 478) (*inter alia*) also favours non-IE origin and adduces Gk. μυρίκη 'tamarisk', Hit. *muriuš* 'grape', and a wealth of non-IE comparanda, including PFU **marja* 'berry' (Fi. *marja*, Mari *mör*), Lezgian *mere*, Lak *mamari* 'blackberry'; Ubykh *marḳa* 'mulberry' and PK **marçqw*- 'strawberry' (Ge. *marçqvi*, Sv. *bäsq*).

Discussion Given the extremely widespread distribution of the compared forms, stretching from Uralic to Celtic, an etymological relationship between them is far-fetched. In my view, it is preferable to delimit the comparison at least on semantic grounds. What remains clear is the cognacy between Armenian and Greek forms, both reflecting quasi-IE **mor*-. We. *mer-wydden* can likewise reflect this root through umlaut, but the long root vowel of Lat. *mōrum* is difficult to explain in terms of PIE morphology. We must then resort to a non-IE alternation **e* ∞ **o* ∞ **ō*.

The Celtic forms reflecting **smiar*- can hardly be related, given the "*s* mobile", for which there is no evidence in other forms, and the disyllabic structure. Given the very divergent semantics of Gk. μυρίκη 'tamarisk' and Hit. *muriuš* 'grape', they are best kept aside. Proposed comparanda in Uralic and Kartvelian agree on a "root" structure *mVr*, but also contain additional, unexplained phonemes and different meanings. Thus, the risk of chance similarity is alarmingly high. The East and West Caucasian comparanda, in particular Lezg. *mere*, Tab. *merer* 'blackberry' (cf. Nikolayev & Starostin 1994: 804 are semantically a better fit and potentially related, but this is impossible to confirm.

Conclusion Non-IE ***mor-*** (Arm, Gk) : ***mōr-*** (It) : ? ***mer-*** (Celt)

* * *

iv 60. **մորմ** *morm* (Vardan Aygekcʿi) 'tarantula; small lizard', *mor* (Amirdovlatʿ) 'tarantula, harvestman (phalangium)' (HAB III: 347, EDA 478–80, J̌ahowkyan 2010: 535–6). Attested since Middle Armenian. See EDA 478 for a discussion of the rich dialectal material.

Proposals Martirosyan (EDA 497–80, 2013: 118) compares Gk. μορμώ (-οῦς or -όνος) 'hideous she-monster, bugbear; name of a frightening spirit' and Lat. *formīdō*, *-inis* 'fear, alarm, bogy', assuming a Mediterranean substrate word with "broken reduplication" **mor-m-*. He further links this form with the NW European lexeme **mor-* reflected in ON *mara* 'nightmare, female ogre', OHG *mara* 'nightmare'; SCr. *mòra* 'nightmare, incubus'; Middle Irish *mor-rígain* 'female demon, evil power; name of a warrior queen'. It is argued that Armenian represents an "intermediary position" between these two groups of forms, because it attests forms both with and without the final *-m*. Finally, in order to provide a semantic link between 'female monster, fear' and 'tarantula', these forms are compared to Gk. μύρμηξ, Lat. *formīca*, Arm. *mrǰiwn* 'ant'.

Discussion The form *morm* is attested earlier than the form *mor*, and a loan from Greek cannot be excluded on formal grounds, but the semantic difference speaks against it. The Armenian word, then, reflects **morm-*. It is unclear whether this form, underlying also the Greek form, reflects a "broken reduplication" or a suffixed form **mor-mo-*.[82] In case we assume the latter, the connection with the forms for 'nightmare' (vel sim.) is straightforward and it may be possible to view these forms as derivations of **√mer-* 'die'.

Comparing these forms with the lexeme 'ant' is a tenuous exercise for semantic reasons. The word for 'ant' is not only attested in Gk. μύρμηξ and Lat. *formīca*, but in nearly all non-Anatolian branches of IE. A reconstruction **morH-* can explain the majority of forms, including YAv. *maoiri-*, Oss. D *mælʒyg*, I *mulʒug*; RuCS *mravьjь*, SCr. *mrâv*, Li. *marvà* 'horsefly; (coll.) insects'; and OIr. *moirb*. The Germanic forms continue root forms **meur-* (Old Sw. *mýra*, Du. *mier*) or **mour-* (ON *maurr*), apparently through metathesis **-rH-* > **-Hr-*. Skt. *vamrá-*, *valmīká-* 'ant-hill' presuppose metathesized **Hamra-* and **Harmi-* respectively. A similar metathesis occured in ToB *warme** (< **Hrmi-*) and perhaps the Hesychian forms βόρμαξ and βύρμακας (< **Hro/urm-*). It is possible that this type of metathesis were influenced by **H(o)rm-* 'worm' (cf. Lat. *vermis*, Go. *waurms* 'snake', Li. *vařmas*; de Vaan 2008: 234). Gk. μύρμηξ and Lat. *formīca* betray a similar assimilation **morH-* > **morm-* (possibly influenced

[82] Lat. *formīdo*, if related, probably obtained its suffix from the antonyms *cupīdō* 'desire' and *lubīdō* 'lust' (de Vaan 2008: 234).

by the 'worm'-lexeme too) and Latin shows a subsequent dissimilation **morm-* > **form-*. This dissimilation may have been motivated by the assonance with the verb *mor-* 'die', which was lost in Greek. Arm. *mrǰiwn* (var. *mrǰimn*) presupposes **murḭ-*, probably from **murṷ-ḭa-* (Olsen 1999: 493) and shows an irregular change of **o* > **u* in the root, just as in Greek. All of these irregular changes observed are usually ascribed to the influence of taboo (Morani 1994). Since the lexeme is so widely attested, even in Tocharian, and since the natural habitat of ants covers all of Eurasia, there is no reason to assume a non-IE origin.

Thus, it is difficult to understand why Martirosyan maintains the cognacy between Arm. *mor*(*m*) and the word for 'ant' while ascribing substrate origin to the former. The Balto-Slavic-Germanic-Celtic word for 'nightmare' (vel sim.) may result from a semantic shift of **mor-eh$_2$-* 'death', an abstract noun from the root **√mer-* (e.g. Matasović 2009: 278). In this case, the root may have obtained secondary semantic features pertaining to 'terror, fear' (etc.) already in the PIE dialects, and Gk. μορμώ may be seen as a secondary derivative **mor-mo-*, potentially a nursery formation. The connection of Lat. *formīdō* hinges upon the assumption of a dissimilation **morm-* > **form-*, which can hardly have been affected by *formīca* 'ant'. This makes the etymology very speculative. The Armenian meaning is significantly distant and the semantic 'missing link' is only the 'ant'-lexeme (Martirosyan 2013: 118), which, as we have seen, must be ascribed to PIE after all. It is therefore highly uncertain to which forms Arm. *mor*(*m*) can be compared and whether it can be ascribed a European/Mediterranean substrate origin.

Conclusion Uncertain. No obvious comparanda.

* * *

iv 61. մուխ *mowx* (*o*) 'smoke' (Hübschmann 1897: 475, HAB III: 353–4, Solta 1960: 187–8, Olsen 1999: 33, EDA 484, J̌ahowkyan 2010: 537).

Proposals Compared with Gk. σμύχω 'burn slowly, smoulder'; MIr. *múch* 'smoke', MWe. *mwg* 'fire'; OE *smocian* 'smoke', *smēocan* 'smoke', Du. *smuigen* 'smoke, smolder'; and sometimes Li. *smáugti* 'choke, strangle', Ru. *smúglyj* 'dark-complexioned'. Given the multiple

formal problems, Martirosyan (EDA 484) assumes a European substrate word.

Discussion The word shows significant formal variation. The Armenian form presupposes *(*s*)*mukH-o-*, which in IE terms comes closest to Gk. σμύχω (quasi < **smuHkH-*, if not **smuHg*^{h}-). Given the consonantism of Du. *smuigen* (quasi < **smuHg*^{h}-), the more widespread Proto-Germanic stem **smeukan-*, **smūkan-* was probably back-formed from the iterative **smukkōn-* < **smug*^{h}*-n-* (Kroonen 2013: 458–9, 460). The Celtic forms can continue **mu*(*H*)*k*(*H*)-, crucially lacking initial **s-*. If the Balto-Slavic forms belong here, they presuppose a root shape **smeuHg*^{h}-, but given their aberrant semantics, I prefer to leave them aside.

Given the formal problems and the quite limited distribution, it is safest to assume a loanword from an unidentified language. Although one might perhaps pose an original root *(*s*)*meuHg*^{h}-, it would require the assumption of *s* mobile and Armenian and Celtic showing an *ad hoc* devoicing ("sandhi"). Moreover, the preservation of initial **s-* in Greek is problematic, and the alternation of σμ- and μ- is mostly found in non-inherited words, e.g. μῑκρός, σμικρός 'small' (Beekes 2010: 951–2). We may pose the basic alternants **smŭg*^{h}-, **smŭk*^{h}- and **mŭk*^{h}- with a late IE phoneme **k*^{h} (alternatively reflected as a cluster **kH*), but as for the exact proto-forms in Armenian (**smuk*^{h}- or **muk*^{h}-) and Greek (**smūg*^{h}- or **smūk*^{h}-), they cannot be definitively assigned to one of these variants. Finally, I would not exclude the possibility that Arm. *mowx* was secondarily influenced by *cowx* 'smoke', a word of possible Kartvelian origin (see III 20). Therefore, any reconstruction of the word is relatively uncertain.

Conclusion Non-IE ***smŭk**$^{\mathbf{h}}$- (?Arm, ?Gk) : ***smŭg**$^{\mathbf{h}}$- (Gmc, ?Gk) : ***mŭk**$^{\mathbf{h}}$- (Celt, ?Arm)

* * *

IV 62. ***նայ*** *nay* 'wetness; (adj.) humid' (HAB III: 426–7, Solta 1960: 355, J̌ahowkyan 2010: 561).

Proposals Ačaŕyan (HAB III: 426–7) reconstructs **sn(e)h_2-ti-* (in contemporary notation) from the root **√sneh$_2$-* 'swim, bathe' (Skt. *snā́ti* 'bathe', Gk. νέω 'swim'). Alternatively Martirosyan (2013: 115) follows Scheftelowitz (1904–05) and compares Gk. νοτία 'wetness', which is connected with Νότος, the personification of the south-western wind (bringing mist). Following the classification of the Greek word as Pre-Greek (Beekes 2010: 1025), Martirosyan assumes a shared Greek-Armenian loanword **notiu̯eh$_2$*.

Discussion The traditional derivation from **√sneh$_2$-* is hard to reject. Gk. νοτία is a better match semantically, but the vocalism is problematic. The Armenian change of **o* > *a* in open syllables probably postdates the vowel weakening of e.g. **i* and **u*, but in this example it would have operated before the apocope (as **noy* would be a closed syllable). If the vowel weakening postdates the apocope, as usually assumed, this chronology becomes impossible. Note that no clear examples of **o* > *a* in *synchronically* closed syllables exist. Consequently, the comparison of the Greek and Armenian forms should be rejected.

Conclusion Probably < PIE **sneh$_2$-ti-*.

* * *

iv 63. ***նիւ*** *niw* 'a plant' (HAB III: 455, J̌ahowkyan 2010: 569).

Semantics The meaning is not entirely clear. It is 'sorta di ortaggio' according to Ciakciak and 'banǰar inčᶜ leṙnayin' (some mountainous herb) according to NBHL. In modern dialects *niv* seems to refer to 'lamb's lettuce, Valerinella locusta' (Łazaryan 1981). Ališan (1895) assumes a meaning 'tarragon', on account of the potential relation with *nowik*, *nowič*. Petrosean (1875) assumes 'wild turnip' but without attestations. The only early literary attestation is in *On the Transfiguration* by (Pseudo)-Ełišē, of which the second part describes the life of a monastic community on Mount Tabor in Galilee. The relevant passage reads:

> *Քաղեն զնիւ լերինն, եւ թթուեցուցանեն աղիւ եւ ջրով եւ զոպայիւ: եւ որպէս ինքեանք*

> *ասեն, կարի յոյժ օգտակար է ի տապ աւուրց խորշակի։*
>
> They gather *niw* from the mountain and make it sour with salt, water, and hyssop. And as they say themselves, it is very useful in the heat of a dry day.

This use of the plant is similar to the way in which mustard greens (like bok choi) are often prepared in several, most notably East Asian, cuisines today, i.e. by draining them with copious amounts of salt and covering them in water and herbs whereby they ferment and become acidic without the use of vinegar. We can therefore surmise that Petrosean is correct in assuming that *niw* referred to a kind of wild turnip of mustard.

Proposals No etymology offered by Ačaṙyan or J̌ahowkyan (see below).

Discussion Assuming that *niw* originally denoted a kind of wild turnip or mustard, it might reflect *(*s*)*nēpV-* which makes it possible to compare Gk. νᾶπυ (< *(*s*)*nāpu-*), σίνᾶπι 'mustard' (< **s*$_2$*inapi-*), and Lat. *nāpus* 'turnip' (cf. Walde-Hofmann II: 143 with references). For the Latin word, however, it is impossible to decide between a loan from Greek or an independent loan *(*s*)*nāpu-*. The comparison of the Greek and Armenian forms presupposes an alternation **ā* ∞ *ē*, which, strikingly, is paralleled in another word for 'turnip', viz. Lat. *rāpus* (< **rāp*), OHG *ruoba* (< PGm. **rōbjōn-*, presupposing **rāp-* or **rāb*^{h}*-*), Li. *rópė* (< **rāp-*), Gk. ῥάφανος, ῥάπυς (< **rap*$^{(h)}$*-*); vs. ORu. *rěpa*, SCr. *rȅpa* (< **rēp-*).

The alternation **ā* ∞ **ē* is hardly explicable from the perspective of PIE ablaut, unless we assume the Armenian form to reflect an obscure lengthened grade formation **(*s*)*nēh*$_2$*p-* and the operation of Eichner's Law.[83] In any case, the Greek form with initial **s*$_2$*i-* must

[83] See Pronk 2019 for a critical evaluation of the evidence for Eichner's Law, i.e. the rule that **h*$_2$ (and perhaps **h*$_3$) does not colour a lengthened **ē*. While Armenian itself does not contain evidence that contradicts this rule, it remains doubtful that the rule applied to PIE proper. Admittedly, much relies on the interpretation of the Anatolian evidence and whether one accepts the reconstruction of a PIE phoneme **a*, so that a final decision remains somewhat driven by individual leanings.

have been a loanword. We are clearly dealing with an etymon of non-IE origin, most likely belonging to the same stratum.[84]

Conclusion Non-IE ***(s)nēp-** (Arm) : ***(s)nāp-** (Gk, ?It)

* * *

iv 64. ***ոլոռն*** *olorṅ* (*-an*, *-ownk^{c}*, *-anc^{c}*) 'pea, bean; drop' (HAB III: 551, EDA 526, J̌ahowkyan 2010: 600).

Proposals Usually considered a borrowing from the same donor as Gk. ὄλυραι (pl) 'rice wheat', further compared with Akk. *ḫallūru*, *ḫullūru*, *ḫillūru*, *ḫallāru* 'peas, chickpeas (?)', Syr. *ḥūrəlā* 'a kind of *Lathyrus*' (Adontz 1938: 463, EDA 526, Martirosyan 2013: 115).

Discussion The formal similarity between the Greek, Armenian and Semitic forms is considerable enough to accept an etymological connection, but neither of these forms can have served as a donor for the other. The different spellings of the Akkadian word points to vocalic alternation which shows that the word is foreign there. The Greek and Armenian forms must then be borrowings from a form in an unknown Near Eastern language, which is ultimately connected with the Semitic forms (cf. GEW II: 383, EDA 526).

The potential suffix *-*ur-* could be identical to that of Gk. λάθ-υρ-ος 'pulse, Lathyrus' (if < *$l̥t^{h}$-ur-*) against Lat. *lēns*, *lentis* (< **lent-*). The reflection of this suffix as *-or-* in Armenian would at first sight suggest a Hurro-Urartian donor, cf. *xnjor* 'apple' (ii 5) and perhaps *ałtor* 'sumac' (§ 2.1.2.1). The declension as an *n*-stem, however, points to the preservation of the old acc.sg of a root noun **olorm̥* > **oloran-*

[84] For Gk. σίναπι, an Egyptian origin has been assumed on account of the prefix σι- (e.g. Hehn 1911: 211–2), but this is rejected by Mayrhofer (1961) because there are no Egyptian comparanda. Demotic *snw-p.t* 'a plant' comes formally close, but its exact meaning is unknown. If it really means 'mustard', it might also be a loan from Greek. Another hypothesis (Przyluski & Régamey 1936) involves Austronesian comparanda, cf. Malay *sawi*, *sĕnawi* 'mustard' < Malayo-Polynesian **sapi*, **s-Vn-api*, cf. Batak *sabi*. A form with a different prefix, viz. **sVr-sapi-* is assumed to be the donor of Skt. *sarṣápa-* 'mustard'. This is an attractive hypothesis, since it accounts for both the Mediterranean and Sanskrit forms on the basis of a single morphological system. On the other hand, the etymon is not widespread in Austronesian, so its antiquity there is uncertain, and its trajectory into Greek/Armenian would be unclear. Furthermore, *Sinapis* is mostly assumed to have spread from the Mediterranean, not Asia.

(compare *siseṙn* 'chickpea', IV 73). Given that the word also refers to a kind of pulse, it suggests that it belongs to an older stratum together with this form (Martirosyan 2013: 123). Moreover, if the Semitic word passed into Hurro-Urartian, and then to Armenian, we would rather expect Arm. ***xoloṙn*, and the loss of the initial consonant would be unexplained. Therefore, the word was most likely adopted by the predecessors of Greek and Armenian at a relatively early stage.[85]

Conclusion Non-IE ***(H)olor-** (Arm) : ***(H)olur-** (Gk)

* * *

IV 65. ոսպն *ospn* (*-an*) 'lentil' (HAB III: 568, Olsen 1999: 141, J̌ahowkyan 2010: 104).

Proposals Compared to Gk. ὄσπριον 'pulse, legume', often under the assumption of an old **-r-*/*-n-* heteroclitic (Olsen 1999: 141). Katz (2000: 84–5) derives the Greek word from **u̯osp-r-*, **u̯esp-n-* 'shroud, covering', comparing Gk. ἕσπερος, Lat. *vesper* 'night' (i.e. 'shrouded'). Consequently, the Armenian form is excluded from the comparison, because the outcome would have been **gosp*°. More often, the Greek word is assumed to be a borrowing, but without mentioning the Armenian word (DELG 55, GEW II: 435, Beekes 2010: 1118). Martirosyan (2013: 115) includes the Greek and Armenian words among isolated words with probable foreign origin.

Discussion Considering that the Greek and Armenian forms can both reflect **(H)osp-* and are semantically very similar, there is no reason to separate them. Furthermore, any attempt at furnishing the Greek word with a root etymology, such as the proposed derivation from *√*u̯esp-*, requires significant semantic shifts that cannot be substantiated. The word refers to one of the Neolithic founder crops and is isolated to Greek and Armenian. For this reason, an early borrowing from a non-IE language is highly likely.

Although the correspondence of Gk. *-ρ-* with Arm. *-n-* is ostensibly reminiscent of a PIE heteroclitic stem, it should be kept in mind that other, more obvious loanwords within the semantic field of

[85] A daring hypothesis would therefore be that the word was adopted with an initial quasi-IE laryngeal **H-*.

legumes also shows a suffix *-n* in Armenian (cf. *siseṙn* 'chickpea', *oloṙn* 'pea, bean'). As assumed by Furnée (1979: 27), the case of **osp-n-* : **osp-r-* can contain the same non-IE suffix *-n-* ∞ *-r-*, which is clearly seen in Gk. βλῆχνον, βλῆχρον 'fern'.[86] The Greek word must reflect **bʰlēgʰ-r/n-*, a loanword from a non-IE language comparable to Lat. *felix*, *filix* 'fern' < **bʰelVk-*, and Old Sw. *brœkne*, Da. *bregne* (< **breknan-* < **bʰreg-n-*). In all likelihood, therefore, the Armenian and Greek forms are relatively early borrowings from a substrate language that connects both Germanic and the Mediterranean languages.

Conclusion Non-IE **(H)osp-n-** (Arm) : ***(H)osp-r-** (Gk).

* * *

iv 66. ***պալ*** *pal* (hapax) 'rock' and **pał* in *pał-anjaw* 'stony cave', *pł-pł-a-kᶜar* 'immovable stone' (HAB IV: 4, EDA 548, J̌ahowkyan 2010: 615). Poorly attested in the literature but widespread in southern dialects. See EDA 548 where the basic meaning 'rock' is established.

Proposals Martirosyan (EDA 548) compares Hsch. πέλλα· πέτρα 'rock', Gk. φελλεύς 'uneven, stony ground'; OHG *felis* 'rock', ON *fell*, *fjall* 'mountain'; OIr. *ail* 'rock, stone', MIr. *all* 'cliff'. Beekes (2000: 30, 2010: 1168, without Armenian) considers these forms to reflect a non-IE word on account of the alternation π- ∞ φ- and the morphological "variation" **pelsā-* and **peliso-*. Already Hubschmid (1950: 66–72) adduces to this etymon a number of Romance forms going back to **palla* (e.g. Galician *pala* 'rock shelter, burrow') or **pellawo-* (e.g. Bessans [Savoie] *peilęvo* 'steep rock, chasm', Central Ladin *pelf* 'hard rock').[87] Furnée (1972: 161–2) compares these Pre-Romance forms to the Greek ones, assuming a Mediterranean word, but keeps the Germanic forms separate, as he prefers to compare them to Skt. *pāṣāna-*, Pash. *parša-* 'stone' as an inherited word. Martirosyan

[86] Interestingly, Furnée (1979: 27) appears to be unaware of Arm. *ospn* and compares Greek ὄσπριον only with OGe. *osṗni* 'lentil'. It is more economical, however, to consider the Georgian form to be borrowed from the identical Armenian one (HAB III: 568).

[87] Proto-Berber **pallā* 'height', potentially a Romance loan, has also been adduced in this context (Boutkan & Kossmann 1999).

(EDA 548, 2013: 122) assumes a European substrate word entered Armenian after the shift of initial **p* > *h*.

Discussion Since the lenition of initial **p*- > *h*- in Armenian must have taken place while Armenian was spoken in the Caucasus (cf. Ge. *poni* 'ford' < PA **pon*-; III 46), it is unlikely that it preceded the adoption of a loanword from a European substrate language. I therefore prefer to assume that the input of the Armenian form had initial **b*-, betraying a voicing alternation with the remaining comparanda, which show initial **p*-.

The simplest way to account for the variation of Arm. *-l* and *-ł* is to reconstruct an *s*-stem **bal-Vs*- (> **pal*-), **bal-s-V*- (> **pał*-). The alternation of NOM *pal*-, OBL *pał*- would then have to be preserved long enough for different variants to be generalized in the dialects. Words from non-IE languages of Europe could apparently be borrowed as *s*-stems and ostensibly be subject to suffixal ablaut, cf. also **bʰar-es*- (Go. *bariz-eins* 'barley') vs. **bʰar-s*- (Lat. *far*, GEN *farris* 'flour', OCS *brašьno* 'food'). This is probably a non-IE loanword on account of the root vowel **a*, which, at any rate, would be unusual in an old *s*-stem (Kroonen et al. 2022: 5).

The apparent *s*-stem declension of the present etymon is most clearly seen in the West Germanic forms (OHG *felis*, OS *felis*, *filis*), which must continue **falisa*- in light of OFr. *falise* 'cliff' (FEW XV/2: 104–5, Kroonen 2013: 134). Since *o*-grade forms would be unexpected in an original *s*-stem, it is preferable to assume a non-IE **pales*(*o*)-, alternating with **pels*-, cf. Hsch. πέλλα < **pelsā*. In Celtic, as in Armenian, both variants **pales*- (OIr. *ail* 'rock, stone') and **pals*- (MIr. *all* 'cliff') may be found.

Conclusion Non-IE ***bal-(e)s**- (Arm) : ***pal-(e)s**- (Gk, Gmc, Celt)

* * *

IV 67. ***ջնար*** *ǰnar* (*a*) 'harp, lyre' (HAB IV: 129, Olsen 1999: 956, J̌ahowkyan 2010: 652–3).

Proposals Martirosyan (2019: 188–9) adduces Gk. κιθάρα, Hom. κίθαρις 'lyre', as well as Hat. *zinar*, *zinir* 'a string instrument', and posits the reconstructions **gʰidʰara*- for Greek and **gʰindʰara*- for

Armenian, comparing the alternation of *-d^h- and *-nd^h- to the cases of pre-nasalization in Pre-Greek words (Furnée 1972: 267–91) and especially the example Gk. γέφυρᾱ < *g^web^hur- : Arm. *kamowrǰ* < *$g^w(a)mb^hur$- (IV 46).

Discussion The word is clearly non-Indo-European, cf. also Syr. *kennārā* (→ Arm. *kʿnar* 'lyre'), Heb. *kinnōr* 'kithara'. According to Martirosyan, the form *ǰnar* was adopted in common by Greek and Armenian, early enough to undergo devoicing and Grassmann's Law in Greek and secondary palatalization in Armenian. However, it is far from certain that PIE *g^h was susceptible to Armenian secondary palatalization (Scala 2017). Moreover, the outcome of the cluster *-nd^h- was clearly *-nd-*, as shown by *gind* (*a*) 'earring' < *$u̯end^h$-eh_2- (EDA 213–4). Assuming palatalization of *g^h, we may of course set up a reconstruction *g^hinara-, but after all, it is more likely that the Armenian word represents a later borrowing from an unknown donor form with an already palatal onset. The Arm. TN *J̌avax-kʿ* ← Ur. *Zabaḫae* shows that Armenian could substitute the Urartian phoneme represented by ⟨z⟩, whatever its exact articulation, with *ǰ*. It is therefore conceivable, albeit not demonstrable, that the immediate donor of the Armenian word was Urartian.

The donor language, whether Urartian or not, may of course have borrowed the word from Hat. *zinar*, which also spread to Akk. (lex.) *zannaru* 'lyre' (CAD XXI: 46). Conversely, Martirosyan (2019: 188) assumes that the Hattic word was borrowed directly from Armenian, but such an assumption is problematic, as no other examples of Armenian loanwords in Hattic exist and because the Armenian form is unlikely to represent a reflex of *g^hind^hara-, as we have seen. The clearly connected Ge. *č̣ianuri* '3/4-stringed Georgian viol' has a palatal onset as well, but cannot have been borrowed from Armenian on account of the vocalism and the initial č̣- (instead of ǯ̣-). Although the Greek and Armenian words are likely to be related, the paths of transmission into the two languages were most likely separate.

Conclusion Uncertain. Probably a late (Urartian?) borrowing.

* * *

IV 68. ***ա թ*** *sat^{c}* (*a*) 'amber' (HAB IV: 155, J̌ahowkyan 2010: 662).

Proposals No acceptable etymologies are recorded by Ačaŕyan (HAB) or J̌ahowkyan (2010).

Discussion Ačaŕyan (HAB IV: 155) gives Ge. *sati*, Udi *sat* 'amber' as loanwords from Armenian. Although it cannot be excluded that the Armenian word was borrowed from one of these forms instead, the etymological background of either form would be obscure. Therefore, I propose that the Armenian form goes back to *$\acute{k}_{\text{u}}$nt-éh$_2$- with a change to *sanϑ-á- > *sat^{c}a- (compare *arcat^{c}* 'silver' < *$h_2$erǵ$_{\text{u}}$nt-ó-; Kümmel 2017). This means that it may be the same *Wanderwort* reflected by Li. *giñtaras* 'amber' < *$g^{(h)}$$_{\text{u}}$nt- (→ Ru. *jantar'*), cf. also Oss. (D) *ʒinʒi* 'amber, pearl', and Phoenician *yntr*. The alternation *$\acute{k}$ ∞ *$g^{(h)}$ of Armenian vis-à-vis Lithuanian is paralleled in *salam*(*b*) : OCS *golǫbъ* (IV 69).

Discussion Non-IE ***ǩnt-a-*** (Arm) : ***g$^{(h)}$nt-ar-*** (Balt)

* * *

IV 69. ***ա լ ա ի (բ)*** *salamb* (*a*); NOM.PL *salamownk^{c}* (*salamn**), MidA *salam* (*u*) 'a kind of game bird, ?francolin' (HAB IV: 156, EDA 565–6, J̌ahowkyan 2010: 662).

Proposals No etymologies are offered in older literature. Martirosyan (EDA 565–6) compares Lat. *columba* 'dove, pigeon', OCS *golǫbъ* and, hesitantly, Gk. κόλυμβος 'grebe', labelling this as a Mediterranean word.

Discussion The comparison between Lat. *columba* (< *koloNb^{h}-) and OCS *golǫbъ* (< PSl. *gȍlǫbъ* < *$g^{(h)}$oloNb^{h}-, cf. SCr. *gȍlūb*, Cz. *holub*) goes back to the first Indo-Europeanists (Bopp 1833–1852: 336). Given the irregular correspondence of the initial consonants in Italic and Slavic, the words have mostly been considered independent formations with the same suffix complex *-*n*-*b^{h}o*-, based, however, on two different roots. One has suggested, e.g., *√*ǩel-* 'cover, hide' or *√*kᵘel-* 'dark, black' for Lat. *columba* and *√*g^{h}leh$_1$-*

'glow' for *golǫbъ* (cf. Batisti 2021 with references). Yet, while etymologies of this type are phonologically unobjectionable, they are less convincing on the semantic side. The reconstruction of an IE suffix **-n-bʰo-* is hard to defend (cf. *aławni*, IV 2), and after all, the etymological separation of two words with the same meaning and nearly the same form is intuitively uncomfortable.

Taking into account the geographically limited distribution, it thus is more likely that these forms represent borrowings from the same, unknown language, as already assumed by Oštir (1921: 49). As shown by Jakob (2023: 300–314), the alternation **T* ∞ **D⁽ʰ⁾* finds at least a handful of parallels in foreign words with a similar distribution, e.g. Lat. *falx*, *falcis* 'scythe' (< **dʰalk-*, with an illegal root structure) vs. Li. *dalg̃is* 'id.' (< **dʰalg⁽ʰ⁾-*); cf. also Lat. *carpinus* 'hornbeam' < **karp-ino-* vs. Ru. *grab* 'id.' < **g⁽ʰ⁾arb-* (IV 48). The non-IE origin of the 'dove'-word is also supported by OE *culfre*, *culufre* 'dove' (quasi < **gulubʰ-*). The absence of the nasal in Germanic cannot be explained by IE sound laws but is, however, paralleled in the intra-Balto-Slavic correspondence of *jarząb* 'hazel-grouse' < **i̯ereNb-* vs. Li. *jerubẽ* 'id.' < **i̯erubʰ-* (Derksen 2000). On the face of these and other examples, we can assume the existence of a non-IE (bird-name?) suffix **-Nbʰ-* ∞ **-ubʰ-* (cf. Matasović 2020).

On this background, it is very likely that Arm. *salam*(*b*) (quasi < **ḱolmbʰ-*) is borrowed from the same etymon as the Italic and Slavic forms. Yet, Batisti (2021: 209) stresses the semantic difference and considers it "more prudent to leave [this] comparison aside". Here, Batisti assumes that the meaning is 'francolin'. This meaning cannot be established with certainty, although it is generally assumed to be the best guess (Greppin 1978: 85–6). We should note that most species of francolins share several superficial features with common pigeons, including their size, stout body, short neck, relatively colorful plumeage, and terrestrial habitat. For this reason, I would consider the semantic difference between 'dove' and 'francolin' to be surmountable. On the other hand, Batisti must be correct in severing the comparison with Gk. κόλυμβος 'grebe'. As this is the name for an aquatic species of bird, it is less attractive to compare to names for terrestrial birds, and the internal derivation from the root of Gk. κολυμβάω 'dive' is plausible.

The regular reflex of **-mbʰ-* and **-mp-* is ClArm. *-m-* (e.g. *camem* 'chew' < **ǵmbʰ-*, cf. Skt. *jambha-* 'tooth'; *amowl* 'barren' < **n-putlo-*). This means that the *n*-stem *salamn** (*salamownkᶜ*), first attested in

Philo, as well as the later form *salam* (12th c.), must have the regular consonantism. The final *-b* that appears in the oldest attested form (Łazar Pcarpecci, 5th c.) is therefore problematic. Since it is only attested once, we may speculate whether it is of dialectal origin, but it cannot be established whether *-b* is a relic of the original, quasi-IE *-b^h-*, or of secondary origin.

Martirosyan (EDA 565–6) assumes that the suffix **-mb^h-* is also reflected in Arm. *aławni* 'dove', which he compares to Lat. *palumbēs*. However, as discussed under IV 2, this comparison cannot be maintained. Therefore, Arm. *salam*(*b*) remains the only example of this suffix in the Armenian corpus.

Conclusion Non-IE ***ǵol-mb^h**- (Arm) : ***kol-omb^h**- (It) : ***g$^{(h)}$ol-omb^h**- (Sl) : ***gul-ub^h**- (Gmc)

* * *

IV 70. սանտր *santr*, *sandr* (*o*, *i*) 'comb', *santr brdoy* 'wool-carder' (Hübschmann 1897: 488, HAB IV: 174–5, J̌ahowkyan 2010: 668).

Proposals A comparison with Gk. ξαίνω 'card, comb wool', ξάντης 'wool-carder' was originally proposed by Pictet (1863: 106 fn. 1), but discarded by Hübschmann (1897: 488) and Ačaṙyan (HAB IV: 174–5), considering the correspondence of Gk. ξ- and Arm. *s*- to be irregular. The comparison is revived by Martirosyan (2013: 116), who assumes a shared substrate borrowing **k^{h}san-t*(*e*)*r*- to explain the irregular correspondence.

Discussion The Greek verb can reflect **ks-n-i̯e/o*, a derivation of **√kes*- 'scratch, comb' (Beekes 2010: 1033), cf. Skt. *kṣan*- 'card', Hit. *kiš-^{zi}* 'comb, card'. It is therefore unnecessary to assume that this word is a borrowing. Furthermore, it must be noted that the Armenian form appears to contain the instrument suffix **-tro*-.[88] If the Greek and Armenian words are connected, the Armenian form might be an early borrowing from an unattested Greek *ξαντρον with an alternative substitution of initial ξ-. For the usually accepted

[88] For the suffix in Armenian, cf. *arawr* 'plough' < **araĝro*- < **h_2erh_3-tro*-. No examples of this suffix in the position after a consonant seems to survive (cf. Olsen 1999: 846–7).

substitution ξ- → Arm. *kᶜs-*, we can adduce *kᶜsest* 'bushel' ← Gk. ξέστης and *kᶜsipᶜiē*, *kᶜsipᶜias* 'swordfish' ← ξιφίας (Hübschmann 1897: 389), as well as names like *Kᶜserkᶜsēs* (← Ξέρξης). Both are attested relatively late and belong to the learned register.

It should be noted, however, that the reflex of PIE initial **Ks-* in Armenian is uncertain, and Ačaṙyan, Hübschmann and others, who reject the reflex *s-*, do not state what reflex they expect instead. What we know is that *-cᶜ-* is the outcome of **-Ks-* in final and internal position (cf. *vecᶜ* 'six' < **suu̯eḱs* and *harcᶜanem* 'ask, inquire' < **prḱ-sḱ-*), and also the outcome of initial **sK-* (cf. *cᶜelowm* 'split' < **skelH-*), but examples of initial **Ks-* are lacking. Given the present example, one is in principle not prohibited from tentatively assuming an early change like **Ks-* > **ḱ-* > *s-*. On the other hand, the fact that the common variant *santr* (Łazar Pᶜarpecᶜi, 5th c.) would show an irregular devoicing from the expected *sandr*, supports the assumption that the word was borrowed with Greek *-τρ-* and sporadically underwent the more explicable post-nasal voicing *-ntr* > *-ndr*. This directionality also casts additional doubt on the direct comparison with Gk. κεντέω 'sting', κέντρον 'sharp point' from an alleged **ḱ(e)nt-ro-* (Mann 1963: 13).

Conclusion Probably ← Gk. **ξαντρον*.

* * *

IV 71. ***սայլ*** *sayl* (*i*/*o*) 'cart, wagon; the constellation Ursa, Arcturus, north pole' (HAB IV: 169, Olsen 1999: 956, EDA 566–7), J̌ahowkyan 2010: 666).

Proposals Long connected with Hsch. σάτιλλα· π[η]λειὰς τὸ ἄστρον (The Pleiades, probably by confusion with Ursa Major, the "cart"), Gk. nom.pl σατί-ναι 'chariot', and considered a shared loanword from Phrygian (HAB IV: 169) or Thracian (Schmitt 1966). Alternatively, Martirosyan (EDA 566) proposes a substrate form **ḱati-lih₂-* underlying both the Armenian and Hesychian forms. The palatal onset implies that Gk. σατίναι was borrowed independently from an unknown *satəm* language with a form akin to the one cited by Hesychius.

Discussion The assumption that the Greek and Armenian words were both borrowed from Phrygian can no longer be maintained as a sequence *sa-* would be unexpected in native words of that language (Obrador-Cursach 2019: 241–2). Also the assumption of a Thracian source appears to be baseless. While it is possible *per se* that the Armenian form goes back to *ḱatil-i-*,[89] this would still require that the Greek form was borrowed independently through a *satəm* language. In my view, a more economic assumption is that both forms were borrowed from a source with initial *s_2- posterior to the change of *s > h in both Greek and Armenian, which was probably among the earliest sound changes (stage 3 in the chronology of Kortlandt 1980; cf. also Ravnæs 1991). This is further supported by Ge. *eṭli* 'horse-drawn wagon, chariot; star, planet' which is likely to be connected as well. The loss of the initial consonant and the replacement of *a* by *e* cannot be explained by Kartvelian sound laws, meaning that the form must have passed through an unknown intermediary language, but the loss of the initial consonant is easiest understood by assuming a primary onset *s-, rather than a stop.

As opposed to Arm. *sayl*, Hsch. σάτιλλα and Ge. *eṭli*, all presupposing a word of the shape *$sa/et(i)l$-, Gk. σατίναι ostensibly contains a different suffix *-(*i*)*n*-. Given the forms in *-(*i*)*l*-, I find it likely, that this is an alternation with a phonetic rationale, which would be reminiscent of the widespread alternation of *l* and *n* in several (unrelated) languages of Anatolia and the Near East (see Kronasser 1966: 58–61). This circumstance further corroborates the view that the donor of these forms is a language of the Near East, and not the Balkanic or Pontic area.

Conclusion Non-IE *$\mathbf{s_2atil}$- (Arm) : *$\mathbf{s_2atil/n}$- (Gk)

* * *

IV 72. ***սեխ*** *sex* (*o*) 'melon' (HAB IV: 197, Olsen 1999: 937, EDA 574, J̌ahowkyan 2010: 674).

Proposals Long compared to Gk. σικύα 'bottle-gourd', σίκους (GEN.SG σικυός) 'cucumber or melon', σίκυς 'cucumber'; Hsch.

[89] I assume that Martirosyan's reconstruction *$ḱatilih_2$- would yield **$satiḷa$-, resulting in an Armenian *a*- or *ea*-stem, but we only find evidence for an *i*- or *o*-stem.

σεκούα· σικύα. The Greek alternation of ι and ε (vs. Arm. *e*) is inexplicable in a word inherited from PIE, and there is wide agreement on assuming a post-PIE loanword. This etymon has sometimes been connected to ORu. *tyky*, SCr. *tȉkva* 'pumpkin'; Lat. *cucumis* 'cucumber' and Heb. *qiššu'ā*, Punic κισσου 'cucumber' (GEW II: 704, Walde-Hofmann I: 299–300, Vasmer III: 160, Furnée 1972: 357).

Discussion The Armenian form presupposes quasi-IE **ḱekH-o-*. The *e*-vocalism is consistent with the variant σεκούα reported by Hesychius, but given the alternation **e* ∞ **i* betrayed by the remaining Greek forms, the word cannot be inherited from PIE. The relationship between the Armenian and Greek forms is beyond question, but there is little basis for assuming borrowing from Phrygian or Thracian (*pace* HAB IV: 197). As in the case of Arm. *sayl* (IV 71), it is likely that the word was borrowed with initial **s_2-* in Armenian and Greek, posterior to the change of **s* > *h* in those languages (EDA 574). This scenario is supported by evidence from Zan (Kartvelian) languages, which, to my knowledge, has not been adduced in this context before: Meg. *šinḳa* 'melon', Laz *šuḳa* (*šurḳa*, *šuḳḳa*) 'melon, cucumber'.[90] These forms show an irregular vocalic alternation *i* ∞ *u*, and cannot be loans from Armenian or Greek.

In light of the Kartvelian material, it is likely that the donor form had the onset **š*, which was treated as **s_2* in both Greek and Armenian. For Greek, the substitution **š* > σ is perfectly reasonable, given the lack of a phoneme /ʃ/ throughout the (pre-)historical period. The same substitution applies to, e.g., Semitic loanwords in Greek (e.g. σήσαμον 'sesame', cf. Akk. *šammaššamu*). For Armenian, the substitution either suggests that *š* (e.g. < PIE **ḱu̯*) had not yet emerged at the time of borrowing, or perhaps rather, that the word was borrowed by the phoneme continuing **ḱ*, but at an intermediate stage of the development towards the attested reflex *s*.

On the other hand, given the potential link with the Slavic forms, one might hypothesize a donor form with initial **č* or a similar palatovelar phoneme or cluster that could be substituted by Slavic **t-* and Italic **k-*. However, the semantic and phonological difference makes it highly uncertain that the Slavic and (especially) Latin forms are related at all. Including the Semitic forms requires the extra assumption of an early, undocumented metathesis of the

[90] I thank Vahagn Petrosyan for drawing my attention to these forms.

consonants, which makes them even more unlikely to be related. On the basis of the correspondence of Gk. σ-, Arm. *s*-, and Kartvelian *š*-, it is therefore safest to assume an input form of the quasi-IE form **s*$_2$*i/ek*$^{(h)}$-.

Conclusion Non-IE ***s$_2$ek$^{\text{h}}$-** (Arm) : ***s$_2$e/ik-** (Gk) : ***ši/uḳ-** (Zan)

* * *

IV 73. ***սիսեռն*** *siseṙn* (GEN.SG *siseṙan*) 'chickpea' (Hübschmann 1897: 490, HAB IV: 218, Solta 1960: 331–2, EDA 576, J̌ahowkyan 2010: 681).

Proposals Compared to Lat. *cicer* 'chickpea', *cicera* 'chickling vetch (*Lathyrus sativus*)', Gk. κρῑ́ός 'a kind of chickpea', Hsch. κίκερροι· ὠχροί Μακεδόνες, and Alb. *thjer*(*r*), *thjerrë*, *thíerr*, dial. *thírqe* 'lentil'. Additionally, some scholars compare SCr. *sȁstrica* 'a kind of Lathyrus (< **ḱiḱr-ikā*) and Hit. *kikri-* 'an ingredient in mash' (HEG I: 570), and OPr. (EV) *keckers* 'Erweis'. The etymon is very often treated as a post-PIE loanword (IEW 598, J̌ahowkyan 1987: 49, Clackson 1994: 143, Beekes 2000: 29, EDA 576).

Discussion The Armenian form continues **sēseṙn* which points to quasi-IE **ḱe/oiḱer-*. The simplest explanation for the final *-n* is that the stem is based on the ACC.SG of a root noun **ḱe/oiḱer-m̥*. The diphthong of the first syllable disagrees with the Latin form, as well as with the allegedly Macedonian form cited by Hesychius, as both of these forms point to **ḱiḱer-*. Alb. *thjerr* simply points to **ḱer-*, without the initial syllable. Demiraj (1997: 398–9) assumes this to be the result of dissimilation, but it is possible that the word was simply borrowed in an unreduplicated form. On the other hand, Gk. κρῑ́ός is best explained through dissimilation of *κικρῑ́ός (IEW 598), but only after a syncope of the second syllable.[91]

The largest formal outlier is OPr. *keckers*, on the basis of which Beekes (2000: 29) explicitly assumes an alternation *ḱ* ∞ *k*. However,

[91] Alternatively, it has been assumed that the Greek form had an older meaning 'curved' (cf. Li. [dial.] *kreĩvas*, *kraĩvas* 'curved, bent') and is identical to κρῑ́ός 'ram', which would be named after its horns (DELG 585, Beekes 2010: 781). This explanation seems far-fetched in light of the clearly similar forms in Albanian and Macedonian.

the limitation of the "centum form" to Prussian and the absence of this word in the other Baltic languages is suspicuous, and it is therefore more attractive to assume a late borrowing. Trautmann (followed by Walde-Hofmann I: 212) assumes that the source is Pol. *cieciorka*, itself a Romance loan, but the substitution of Polish /č/ by OPr. *k* is completely unparalleled. Rather, if the Prussian word stands for /kikers/ (the short vowel is indicated by the spelling ⟨ck⟩), it can be borrowed from MLG *kicher* (Būga 1959: 219). Note that the spelling ⟨e⟩ for short /i/ in the Elbing Vocabulary is paralleled in EV *pepelis* 'Vogel' vs. *pippalins* (III, ACC.PL).

SCr. *sȁstrica* presents a situation similar to the Prussian word. While it is formally unproblematic to assume a derivation from quasi-IE **ḱikr-*, with the addition of the Slavic suffix **-ikā*, the limitation of the word to one South Slavic language makes it difficult to defend a reconstruction for Proto-Slavic, and it leads us to suspect that the word was borrowed only after the expansion of the Slavic languages to the Balkan peninsula in the 6th c. CE.[92]

Having eliminated at least the Prussian form as an irregular correspondence, we are left with the variants **ḱeiḱer-*, **ḱiḱ(e)r-*, and **ḱer-*. Still, the morphological variation implied by these forms is hard to analyze in accordance with the PIE system. A reduplicated stem based on **√ḱerH-* 'feed, nourish' (Jokl 1923: 179–80, de Vaan 2008: 113) would be isolated as the base for a nominal formation only. The exact meaning Hit. *kikri-* is unknown, and thus no arguments can be built upon it. The word has an areal distribution, being restricted to the languages surrounding the Balkanic or Mediterranean area. Apart from this, there is circumstantial evidence for a non-IE origin: the chickpea is part of the early Neolithic package, requires a fairly warm climate, and has not been found in any of the steppe cultures or anywhere in the northern Balkans or Ukraine (EIEC 106). This raises strong suspicion that a word which almost universally denotes 'chickpea' (or 'lentil') cannot be inherited from PIE (Darden 2013).

Returning to the Armenian form, we may either reconstruct **ḱeiḱer-* or **ḱoiḱer-*. Since the word is non-IE, it is unlikely that the

[92] The donor language may be envisaged as a residual *satəm* language of the Balkans, as assumed by Darden (2013: 304). However, as Anthony Jakob (p.c.) suggests to me, the SCr. form might be also represent an assimilation of earlier **cȁstrica*, derived from SCr. *cȁcar*, which can easily be a loan from a Romance reflex of Lat. *cicer*.

diphthong of the first syllable can be explained with reference to PIE ablaut. I would therefore assume that the form with **ei* is correct, since it most easily allows us to understand the variation on a phonetic basis. The substratal alternation **ei* ∞ **i* can be considered parallel to the alternation **ou* ∞ **o* or **u* observed in *aṙowoyt* (IV 8), *artoyt* (IV 12) and *kᶜowpič* (IV 85).

Conclusion Non-IE ***ǩeiǩer-** (Arm) : ***ǩiǩer-** (It, Mac) : ***ǩiǩri-** (Gk, ?Anat) : ***ǩer-** (Alb)

* * *

IV 74. սիւն *siwn* (GEN-DAT.SG *sean*, GEN-DAT-ABL.PL *seancᶜ*) 'column, pillar' (Hübschmann 1897: 490, HAB IV: 221–2, Solta 1960: 430, Clackson 1994: 140–3, Olsen 1999: 135, EDA 579–80, J̌ahowkyan 2010: 682).

Proposals Identical to Gk. κί̄ων, -ονος 'pillar', Myc. *ki-wo-qe* < **ǩīu̯ōN*.[93] This is usually considered to be an isolated Graeco-Armenian lexical isogloss and a potential archaic loanword (Specht 1939: 13, Solta 1960: 430, Clackson 1994: 142–3, Beekes 2000: 21). Praust (*apud* Lubotsky 2002: 323) proposes an *n*-stem *(*s*)*ǩiHu̯-on-* based on *(*s*)*ǩiH-u-* 'shin', comparing Ru. *cev'ë* 'handle, shin'; IIr. **Hast-čiHu̯a-* 'bone-shin' in Skt. *aṣṭhīvá-nt-* 'shin, shank', Av. *ascuua-* 'shank', and Ir. **čīu̯a-* → Arm. *čiw* 'shank, leg' (cf. EDA 580). Further, Praust compares OE *scīa* 'shin, leg', and OHG *skena*, *skina* 'post', which would show a similar semantic shift as the Greek-Armenian word, but Lubotsky 2002: 323 is sceptical of its relation to *(*s*)*ǩiH-u-*. For criticism of other root etymologies, see Clackson 1994: 140–3 and EDA 579–80.

Clackson (1994: 141–2) adduces Arm. *seamkᶜ* 'door post'. If this word reflects an old plural (or dual) formation, the base must have been **siam-*, an *m*-stem. Clackson sees this as a sign of non-IE origin

[93] The treatment of intervocalic **u̯* in the Armenian form may be problematized (Clackson 1994: 140–1), but note *hoviw* 'shepherd' < **h₂ou̯i-peh₂-*. It appears that **u̯* was lost in the position before **u* (including old **ō*) and that intervocalic **u̯* > *g* (as in *y-ag* 'satiated' < **seh₂u̯-*) was retricted to the position before **a* and **o* (Olsen 1986). This would show that the oblique stem *sean-* is analogical after other nouns ending in *-iwn*, like *jiwn* 'snow', GEN.SG *jean* (cf. Clackson 1994: 141).

and adduces also Rom. *ţiu* 'sharp, tall rock' which has been adduced as a vestige of the same, old loanword (Bălţăceanu 2001).

Discussion The reconstruction of a *u*-stem **ḱiH-u-* can be based on the Indo-Iranian and Balto-Slavic comparanda, cf. also Li. *šeivà* 'spool, forearm, shin' < **ḱeiHu̯-eh₂*. The inclusion of the Germanic forms is doubtful as they require *s* mobile. In any case, OE *scīa* must go back to **skĭan-* (as if < **sKiHon-*) and would not be an exact cognate of the remaining forms, that are based on the *u*-stem.

Clackson's comparison with Arm. *seamkᶜ* 'door post' is semantically compelling. Since there is no way to derive this from the stem *sean-*,[94] the Armenian and, by extension, Greek stem must have ended in **-m*. As Clackson notes, the few known *m*-stems in PIE are either root nouns (**dom-* 'house') or derived directly from roots (**dʰeǵʰ-om* 'earth', **ǵʰei-om* 'winter'). These etyma are also widespread and part of the most core lexicon. To maintain the comparison with the Indo-Iranian and Balto-Slavic forms, we would be forced to assume that in **ḱiHu̯ōm*, **-u̯-* is part of the root, which seems far-fetched. On the basis of morphology, distribution and semantics, I prefer to assume that the etymon **ḱīu̯ōm* is of non-IE origin. Rom. *ţiu* 'sharp, tall rock' is not certain to be related due to its divergent meaning and phonological ambiguity (< **sci°* is also possible).

Conclusion Non-IE ***ḱīu̯ōm** (Arm, Gk)

* * *

iv 75. *սունկն sownk(n), sowng(n)* 'tree-fungus, mushroom' (HAB IV: 251–2, Solta 1960: 430–1, EDA 586–7, J̌ahowkyan 2010: 689). Late and poorly attested in the literature (since the 13th c.), but common in the dialects (see EDA 587).

Proposals Usually compared to Gk. σπόγγος, σφόγγος, Lat. *fungus* 'mushroom', and sometimes additional, widely dispersed forms (see

[94] A dissimilation **-nkᶜ* > *-mkᶜ* is unparalleled. However, at any rate the vocalism of *seamkᶜ* must be analogical after the oblique stem *sean-* or the usual alternation pattern *ìw* : *ea* (cf. fn. 93). The transposed reconstruction **ḱīu̯mmes* proposed by Clackson can hardly be valid (cf. Beekes 2000: 21).

below), treated as a non-IE *Wanderwort* or substrate word (Lidén 1933: 52, Ernout & Meillet 1951: 466, GEW II: 770, Furnée 1972: 164, Clackson 1994: 183, EDA 287, Kölligan 2019: 271 fn. 923).

Discussion The initial *s-* of the Armenian form cannot reflect Gk. σπ- or σφ-, so the form *sownk* cannot have been borrowed from Greek (*pace* Walde-Hofmann I: 567). The Greek word is reflected in the form *spowng* 'sponge, mushroom', the only form attested in Classical literature, but almost absent in the spoken language. The vocalism of *spowng* (not ***spong*) appears to have been influenced by *sownk*, however, which demonstrates the presence of the form in the spoken dialects already in the 5th century.

In quasi-IE terms, the Armenian form can go back to **psongV-* or **ḱongV-*.[95] The former reconstruction comes close to Gk. σπόγγος (if < **spong-*), and the latter would have an onset closer to OCS *gǫba* 'sponge', SCr. *gȕba* 'mushroom' < **g*$^{(w)(h)}$*omb*$^{(h)}$- and perhaps Skt. *kṣumpa-* 'mushroom (?)' (sceptical EWAia I: 435). Lat. *fungus* is also ambiguous with respect to the initial consonant, reflecting **bʰongo-* or **gʷʰongo-*. The variants PGm. **swampu-* (ON *svǫppr*), **swamba-* (OHG *swamp*), and **swamma-* (Go. *swamms*, OHG *swam*), all 'mushroom, sponge', can be explained by starting from **su̯ombʰ-on-* (cf. Kroonen 2013: 495), whose root is identical to Gk. σομφός 'spongy' (cf. Salmons *apud* EIEC 539), but otherwise has a unique onset **su̯-*.

It is clear that this etymon cannot be reconstructed for PIE. Starting from the heuristic assumption that all of the forms cited above reflect the same *Wanderwort* or substrate word, they can roughly be reduced to two groups: forms containing a final labial (Skt, Sl, Gmc) and forms containing a final velar (Arm, Gk, It). We may then observe that most forms of the first group can reflect an onset with a velar stop or a bilabial glide **su̯-* or **K*(*s*)-, but the forms of the latter group are more diachronically ambiguous, pointing to either **sp-*, **ps-*, or *(*s*)*K-*. In order to maximize the similarity of the reconstructions, two different approaches may be taken. The first approach is to assume a basic onset *(*s*)*K-* for as many forms as possible: thus Arm. **ḱ-*, Gk. **sk*$^{w(h)}$-, Lat. **g*^{wh}-, Slavic **g*$^{(h)}$-, and Skt.

[95] The reconstruction **spong-* (e.g. Solta 1960: 430 cannot be correct, as it would yield either ***p*^{c}*ownk* (cf. Arm. *p*^{c}*oyt*^{c} 'zeal' with Gk. σπουδή 'haste') or ***spownk* (cf. Arm. *aṙa-spel* 'fable' with Go. *spill* 'fable', Alb. *fjalë* 'word'. The conditioning of the reflexes *p*^{c}- and *sp-* is not clear (cf. Olsen 2017a: 433; Kölligan 2019: 271–87 arguing for *p*^{c}-), but *s-* can be excluded as a reflex.

**ks-*. The Germanic onset **sm̥-* would then betray a donor form that had lost the occlusive element, e.g. ***sgʷʰ- > *sm̥-*. Given the voiced and labialized forms in Greek, Latin, and Germanic, the assumption of an initial **ḱ-* in Armenian would be strange, however. The alternative is to assume a generally labial onset **(s)P-*: thus Gk. **(s)pʰ-*, Lat. **(s)bʰ-*. The Armenian form would then go back to a metathesized **ps-*. This could entail that the Germanic cluster **sm̥-* is a result of an alternation **bʰ ∞ *w*, which is known from other substrate words in Europe (PGm. **arwīt-* 'pea' : Gk. ἐρέβινθος 'chickpea', cf. *aṙowoyt*, IV 8). This approach leaves the Sanskrit and Slavic forms on the side, but facilitates an external comparison with PU **pi̯ŋga₁* 'mushroom' (Zhivlov 2014: 119; cf. Mordvin [Erzja] *pango* 'mushroom', Mari [Birsk] *poŋɣo* 'mushroom', Mansi [Pelymka] *pə̄ŋk* 'fly agaric') as favoured by Gamkrelidze & Ivanov (1995: 825). The geographical distance of the Uralic forms invites scepsis as to their relevance, however. As for the Slavic form **gǫ̀ba*, it is remarkably similar to Tatar *gömbä* 'mushroom' (cf. Chuvash *kămpa*, Turkmen *kömelek* 'mushroom'), suggesting that it may be an independent loan from a Turkic source.[96]

An remarkable external point of comparison is provided by the Nakh-Daghestanian words for 'tree-fungus, mushroom, tinder', cf. e.g. Tsez *ziḳu*, Bezhta *zoḳo*, Avar *sːaḳ*, Udi *šaʿmkːal*. Compare also Ch. *ḳoːžam*, Ing. *ḳoažam*.[97] According to Peter Schrijver (p.c.), the PND paradigm was **s(ː)ɔ́ḳom*, OBL *s(ː)ɔḳómV-*, developing into a Proto-Daghestanian paradigm **s(ː)ɔ́nḳo*, OBL **s(ː)ɨḳwómV-*.[98] It seems likely to me that these forms are somehow related to at least the Latin, Greek, and Germanic forms. Given the possiblity that all of those forms contained an initial cluster **sKʷ- ∞ *sm̥-*, the oblique stem **s(ː)ɨḳwómV-* could have been the indirect source of the etymon. Disregarding the possibly unrelated Slavic and Sanskrit

[96] Jakob (2023: 401–2) assumes the opposite direction of borrowing. At any rate, however, the Slavic word is probably best disregarded here, since, in contrast to the Germanic form, we cannot provide a simple solution for the final labial.

[97] Apparently, the Chechen and Ingush forms show a metathesis of the sibilant and velar. The conditions for this change are not clear. Could these forms be related to the donor of Skt. *kṣumpa-*?

[98] Although the conditioning for the loss of the nasal in most forms is not established (cf. Gigineišvili 1977: 71), the historical presence of a nasal is indicated by Udi *šaʿmkːal* and further helps explain the vocalism of West Tsezic **zəḳu* (Tsez *ziḳu*, Hinuq *zeḳu*) which may have developed from **sɨnḳ(w)u-* but not **sɨḳ(w)u-* (Peter Schrijver p.c.).

forms, it can be assumed that the Proto-Germanic form betrays an assimilation *sṷong^{wh}- > *sṷomb^{h}- (as in *penk^{w}e > *pempe > *fimfe 'five' and *u̯ĺk^{w}o- > *wulpo- > *wulfa- 'wolf'). The Latin, Greek, and Germanic forms would agree on the shape *s(K)^{w}omK^{w}-. Only the final stop vis-à-vis the Daghestanian forms still requires an explanation.

What remains is an explanation for the Armenian word. The ND material presents us with the possiblity that Armenian did not borrow the etymon in Europe but later, from a Daghestanian form of the shape *sɔnḳo- vel sim. This solves the problem of the initial Arm. *s-*, for which both of the possible reconstructions *ps- and *ḱ- are a quite poor fit with the remaining comparanda. Moreover, the Armenian word has an specialized by-meaning 'tree-fungus', in agreement with the meaning of several of the ND forms. The borrowing must have taken place long before the literary period, as it precedes the raising of *on > *un. The absence of the form in Classical Armenian is therefore simply a result of the preference for the Greek loanword *spownk*. It is not problematic to assume that the facultative final *-n* of the Armenian form is secondary (see Weitenberg 1985), being found only in some dialectal forms (EDA 587). A similar Nakh-Daghestanian form (cf. esp. Bezhta *zoḳo*) is a fitting source for Ge., Meg., Laz *soḳo*, *zoḳo*, Sv. *soḳw* 'mushroom'.[99]

In conclusion, it is preferable to consider Arm *sownk/g(n)* a relatively late borrowing from a local, Caucasian (probably Daghestanian) source, rather than a European substrate word. In contrast, the forms found in other Indo-European languages – most likely Latin, Greek, and Germanic; less likely, Slavic and Indo-Iranian – were adopted from an unknown language of Europe, but are probably related to the Nakh-Daghestanian forms.

Conclusion From ***sonḳV-*** (Daghestanian). Ultimately related to European forms reflecting ***(s)g^{wh}ong-***, ***sṷomb^{h}-*** etc.

* * *

[99]These words can in principle go back to Proto-Kartvelian *soḳo- (Klimov 1964: 165), but since they are formally identical, nothing prevents the assumption that they spread at a later point. An alternative idea is that they are borrowed from Proto-Armenian *sonko- (HAB IV: 252) but the loss of the nasal is difficult to explain (see III 62).

IV 76. ***սրինգ*** *sring* (*a*) 'pipe, flute, syringe' (Hübschmann 1897: 382, HAB IV: 283–4, Olsen 1999: 928, EDA 585, J̌ahowkyan 2010: 697).

Proposals Compared to Gk. σῦριγξ, -ιγγος '(shepherd's) pipe'. The Armenian word is considered borrowed from Phrygian by Ačaŕyan (HAB IV: 283–4) and from a Mediterranean substrate by Martirosyan (EDA 585).

Discussion The fact that the Greek word is probably of non-IE origin (Beekes 2010: 1423–4) is irrelevant, and it is unnecessary to assume that the Armenian word is an independent loan from the same source. Assuming a loan directly from Greek is unproblematic. The deletion of the final *-*s* of a consonant stem and the loss of **i* or **u* in the (Armenian) unstressed syllable is parallelled in Arm. *pnak* 'dish platter' ← Gk. πίναξ.

Conclusion ← Gk. σῦριγξ.

* * *

IV 77. ***տաւն*** *tawn* (*i*) 'feast, festival' (HAB IV: 441–2, Solta 1960: 208–9, Olsen 1999: 101, EDA 609–10, J̌ahowkyan 2010: 725).

Proposals Reflects **dap-ni-*, derived from the root **√deh$_2$p-* 'divide' (LIV^2 104), and compared to Lat. *daps*, GEN *dappis* 'solemn feast', *damnum* 'loss, expense' (< **dh$_2$p-no-*); Gk. δάπτω 'devour' (< **dh$_2$p-i̯e/o-*), perhaps δαπάνη 'cost, expense'; ON *tafn* 'sacrificial meal' (< **dh$_2$p-no-*) and perhaps ON *tapa* 'lose' (Kroonen 2013: 510).[100]

A very similar form is presented by **deip-r/n-*, cf. Gk. δεῖπνον 'meal', Go. **tibr* (misspelled *aibr*, Lehmann 1986: 344) 'sacrificial

[100] The comparison with ToA *tāpā-* 'eat' (e.g. Gamkrelidze & Ivanov 1995: 606, EIEC 496) should be abandoned, since the Tocharian outcome of PIE **d-* before a back vowel is *t^s-* (e.g. ToA *t^{s}är-* 'separate' < **der-*, Gk. δέρω 'split'). Hackstein (2001: 19) considers **√deh$_2$p-* to be reflected in ToA *t^{s}āw-*, B *t^{s}āp-* 'grind, crush'. It is more likely, however, that this verb belongs with **√deb^h-* 'diminish' (Mahlzahn 2010: 976), cf. e.g. Hit. *tepnu-^{zi}* 'diminish, despise', Av. *dābaiieiti* 'deceive', ON *tefja* 'hinder, delay' (LIV^2 AddCorr). The comparison with Hit. ^{LÚ}*tappala-* 'person working in the palace kitchen' (Gamkrelidze & Ivanov 1995: 606) is highly uncertain and best left aside (HEG III(8): 113–4).

animal', OE *tiber*, *tifer* 'sacrifice' < **dip-ró-*; Arm. *towar** 'cattle, livestock' < **dip-r*.[101] Often, the Germanic and Armenian forms are separated from the Greek (e.g. IEW 222, Mallory & Adams 2006: 142), and the latter considered a loanword (GEW I: 358, DELG 258). Furnée (1972: 325), however, compares δειπ-, δαπ- and adds δαψ-ιλής 'abundant', considering the entire cluster of Greek forms to be Pre-Greek. He is followed by Beekes *apud* Beekes & Kuipers 1975: 80, who connects the Germanic, but not Armenian, forms (although Beekes 2010: 303 is more hesitant). In his discussion on *tawn* and *towar*, Martirosyan (EDA 609–10) also assumes a "Mediterranean-Pontic-Near-Eastern cultural word" with the meaning 'sacrificial animal, sacrificial meal'.

Discussion Despite attempts to connect the Greek roots δαπ- and δειπ- within a Pre-Greek framework, there is no good reason to separate the former from PIE **√deh$_2$p-*. Further, this root cannot be a post-IE borrowing. It is deeply integrated in the PIE lexicon, as shown by the widespread cognates, all following regular sound laws. Morphologically, the cognates are unproblematic as well, as Latin attests to a root noun, Greek has a **-i̯e/o-* present, and Italic, Germanic, and Armenian all have derivations with **-ni-* or **-no-*. The antiquity of the root is particularly clear if Hit. *taḫūp(p)aštai-* 'butchering block' can be derived from **dh$_2$p-s-to-i-*, as proposed by Rieken (2017).[102]

Although the etymon represented by Gk. δεῖπνον, OE *tiber* and Arm. *towar* is more isolated, their comparison points to an old **-r-/-n-* heteroclitic (cf. Kroonen 2013: 516). If so, the lexeme would also be archaic and not a post-PIE loanword.[103] The question remains if and how the roots **deh$_2$p-* and *deip-* are connected.

[101] The Armenian form would thus provide the clearest evidence for an original NOM.SG **déip-r* but with the root zero grade generalized after the oblique **dip-n-*, much as in Germanic, where the stem was later thematicized. The ClArm. attestation is limited to the compound *towar-ac* 'cattle-pasturing', *towarac-akan* 'shepherd'. Later, the simplex appears in the form *dowar* (Philo). The compound *towarac* can be assumed to contain the verb *aracem* 'pasture' if **towar-arac* underwent haplology (EDA 610). Alternatively, *towarac* is analysed as *tow-arac* 'give-grazing' (Olsen 1999: 748), but considering the extreme rarity of verbal governing compounds where the verb in the first position, this is probably a folk-etymology.

[102] Perhaps the *s*-stem base **dh$_2$p-s-* is also reflected in Gk. δαψ-ιλής 'abundant', but the morphological and semantic aspect of this comparison is otherwise problematic.

[103] The modern dialectal forms reflecting **tavar* 'cattle' (HAB IV: 424) must be unrelated, despite their conspicuous similarity. Given the late attestation of these

Scholars since at least Möller (1911: 44–5) have noted a similarity with the Semitic root **ḏ-b-ḥ*, reflected in Akk. *zību*, Heb. *zeḇaḥ* 'sacrifice, sacrificial animal', Egyptian *dbḥ*(*w*) 'offerings'. Leaving aside explanations for this similarity within the Nostratic framework, we could envisage a case of an extremely old loanword from some Afro-Asiatic language spoken in the vicinity of the PIE homeland (cf. Anthony 2007: 147) or a case of a *Wanderwort* in one or the other direction. If the word is borrowed into PIE, however, the borrowing would have taken place prior to its disintegration (cf. Šorgo 2020: 451), and it is therefore irrelevant to the purpose of the present work.

Conclusion Arm. *tawn* < PIE **dh*$_2$*p-ni-*; *towar* < **dip-r*.

* * *

IV 78. 𐠃𐠊𐠇 *tik* (*a*) 'goatskin, leather vessel' (HAB IV: 405–6, Solta 1960: 335–6, Olsen 1999: 61, EDA 613–4, J̌ahowkyan 2010: 729).

Proposals Compared with OHG *ziga* 'goat' < PGm. **tigōn-* and Hsch. δίζα· αἴξ, Λάκωνες (Lidén 1906: 10–14). Alb. *dhi* 'she-goat' has been compared as well (Huld 1984: 59 with references). The Armenian and 'Laconian' forms point to **dig-*, with an illegal root structure, while the Germanic forms point to **dig*^{h}-. This discrepancy has traditionally been explained as the result of hypochoristic gemination, comparing OE *ticcen*, OHG *zickīn* 'young goat'. Alternatively, Martirosyan (EDA 614, 2013: 120) suggests non-IE origin to explain the alternation **g* ∞ **g*^{h} (cf. also Kroonen 2013: 516).

Discussion The comparative value of Hsch. δίζα is limited because it is likely that the form should be corrected to *αἶζα which would be comparable with Att. αἴξ 'goat', Arm. *ayc* (Perpillou 1972, see IV 4). Albanian *dhi* must reflect **a*(*i*)*ǵ-ieh*$_2$- as well, rather than **dig*$^{(h)}$-, since the usual reflex of initial **d-* is Alb. *d-* (Neri *apud* DPEWA s.v. *dhi*).

forms, they most likely reflect a loanword from Old Oğuz Turkic **tavar*, cf. Ottoman *davar* 'cattle, livestock', Old Uyghur *t'β'r* 'livestock' (Dankoff 1995: 161). The wide distribution of this term within Turkic (cf. Clauson 1972: 442) precludes a borrowing in the opposite direction (*pace* Pedersen 1906a: 460–1, HAB IV: 425).

The etymon is thus limited to Germanic and Armenian, pointing to **dig^{h}-* and **dig-* respectively. Explaining the Armenian *-k* as the result of a hypochoristic geminate is an unsatisfactory solution since such geminates cannot be demonstrated for the protolanguage, let alone Proto-Armenian. Given the limited distribution and culture-specific semantics, it is therefore most likely that the etymon reflects a non-IE loanword.

The appurtenance of similar forms found in the languages of the Caucasus, viz. PK **tqa-* 'she-goat' (Ge., Meg. *txa-*, Sv. *daq-əl* 'goat'), Hinuq *ṭeq̇^{w}i*, Khwarshi *ṭiq̇^{w}a*, *ṭiq̇o*, Avar *deʕen* 'kid' etc. (cf. J̌ahowkyan 1987: 607) is uncertain. Daghestanian forms like Tsez *ṭeka*, Andi *ṭuka*, Khin. *taka* cannot be considered Armenian loanwords (*pace* EDA 614), but are from either Azeri or Persian, cf. NP *taka*, *teka* 'leading he-goat', a borrowing from Turkic, cf. Azeri *täkä*, Old Uyghur *teke*, Oghuz *däkä* 'he-goat' (Doerfer 1965: 528–30, Schulze 2014: 265–6). Whether the Turkic forms can ultimately be connected to the foreign word reflected in Armenian and Germanic as a *Wanderwort* remains uncertain due to the geographical barrier.

Conclusion Non-IE ***dig-** (Arm) : ***dig^{h}-** (Gmc)

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IV 79. գանկ *c^{c}ank*, *c^{c}ang* (*o*) 'fence, hedge, wall' (HAB IV: 450, Olsen 1999: 754, EDA 624, J̌ahowkyan 2010: 742).

Proposals Traditionally analyzed as a verbal governing compound *c^{c}* 'to, as far as' + *ank-* 'fall'. Olsen (1999: 754) alternatively suggests a compound with a "nasal, non-palatal variant of the root **paḱ-*/**paǵ-*" 'strengthen, fasten'. Martirosyan (EDA 624) compares OE *hecg*, OHG *heckia*, *heggia* 'hedge, fence' (< **hagjō-*) and We. *cae*, Breton *kae*, Gaul. *cagiíon* 'hedge, fence' (< **kagio-*).

Discussion The traditional etymology does not instill much faith semantically, and the proposal of Olsen is highly problematic on the phonological side, especially with respect to the assumed depalatalization **pańg-* > **pang-*. In the proposal of Martirosyan, the Arm. *c^{c}ang* would be the oldest form, continuing **skag^{h}-no-*. This form

comes morphologically close to OHG *hagan* 'briar' < **ḱag^{h}-on-*.[104] Additional proposed cognates include Lat. *caulae* 'enclosure, sheepfold; opening, passage' if from a diminutive **kag^{h}-elā-*; and Alb. *thanë* 'cornel, cherry; winter stall for sheep', Arberëshë *than* 'shrubbery' (the only forms showing a palatal **ḱ*), semantically close to ON *heggr* 'bird cherry' and OHG *hagan* (van Sluis, Jørgensen & Kroonen 2023: 216). The root structure **ḱag^{h}-* demonstrates that the root is of non-IE origin. However, the isolated occurence of *s* mobile in Armenian is problematic. Accordingly, a more likely comparandum is PGm. **skagan-*, cf. OE *sceaga* 'copse, thicket', ON *skagi* 'low cape, ness'. The traditional derivation from **skehana-* < **√skek-* 'move quickly, happen' (Orel 2003: 331 with references) does not make sense semantically. The Germanic and Armenian words could instead point to an *n*-stem **skag^{h}-on-* (⇒ **skag^{h}-n-o-*) of non-IE origin. The meanings '(low) thicket' (Gmc) and 'hedge' (Arm) come quite close, but the general range of meanings in the two branches are palpably different, making this comparison uncertain as well.

Conclusion Uncertain. ?Non-IE ***skag^{h}-on-*** (Arm, Gmc)

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IV 80. գաղց *c^{c}anc^{c}* (*i*) 'net, seine' (HAB IV: 450, Olsen 1999: 957, J̌ahowkyan 2010: 742).

Proposals Martirosyan (2016: 294–5) compares Lat. *cassis* 'hunting net', *catēna* 'chain'. He assumes a Mediterranean substrate word with an input **(s)ḱats-i-* in Armenian and **kats-i-*, **kates-na-* in Latin.

Discussion Martirosyan apparently assumes that *c^{c}-* can sometimes reflect **ḱ-* under unclear conditions, but the evidence for this is very weak (cf. the discussion of *c^{c}ax* 'branch' ?< **kHakH-* in EDA 619–21). It is therefore necessary to assume *s* mobile variant **sKats-* > ***c^{c}ac^{c}*, which makes the comparison with Lat. *cassis* (< **kats-i-*) problematic. More fatally, the explanation of Armenian *-n-* offered

[104] For the metathesis **-g^{h}n-* > **-ng^{h}-*, cf. *andnown-k^{c}* 'abyss' < **n-b^{h}ud^{h}no-* and Lat. *fundus* (Olsen 1999: 28).

by Martirosyan 2016: 294 is unclear to me. There is no evidence for a development *-*tsn*- > -*nc*^{c}-, which must rely on the assumption of a sporadic metathesis. For these reasons, the comparison cannot be accepted.

Conclusion No comparanda.

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IV 81. ***ւիքիհն*** *p^{c}k^{c}in* (*a*) 'javelin, dart' (HAB IV: 536, Olsen 1999: 470–1, EDA 654, J̌ahowkyan 2010: 771).

Proposals Has been compared with Lat. *spīca* 'point, spike, ear of corn', *spīculum* 'sharp point'; Ltv. *spikis* 'bayonet' (Petersson 1916: 267), further to Li. *spìginti* 'set in, nip at (of frost)', Li. *speigliaĩ* 'thorns'; ON *spíkr* 'nail' (and additional comparanda in IEW 981). Olsen (1999: 471) reconstructs for Armenian a diminutive *(*s*)*p*^{h}*ih*$_{1}$-*k*-*ih*$_{1}$*no*-. Martirosyan (EDA 654) hesitantly favours the comparison with the Latin and Latvian forms and assumes a European substrate word.

Discussion The only regular comparison is with the Latin and Latvian forms. It can be assumed that the Armenian form goes back to **spiHk-ih*$_{1}$*n*- with the same development of initial **sp*- as in *p^{c}oyt^{c}* 'zeal', Gk. σπουδή 'haste'. The conditions for this change are unclear and the evidence for the alternative development **sp*- > Arm. *sp*- is not easily explained away.[105] The reconstruction **sp*^{h}*ik*- with a voiceless aspirate might imply an older **spHiHk*-, a peculiar root shape, unless one makes the traditional assumption of 'sporadic' aspiration of stops after **s*-. On account of Li. *spìginti* and ON *spíkr*, one could assume a root variant **speiHg*- with a voiced alternant of the final stop, implying that the word is non-IE. The lack of clarity regarding the initial stop calls for caution, however.

[105] Cf. *spaṙnam* 'threaten', Lat. *spernō* 'separate; despise' and *aṙa-spel* 'fable', ON *spjall* 'story', Alb. *fjalë* 'word' (Klingenschmitt 1982: 168–72. Note also the parallelism with the undisputed development **st*- > *st*-. A wealth of potential evidence for the reflex *p^{c}*- is offered by Kölligan 2019: 271–87. Most of this material remains etymologically ambiguous or potentially onomatopoeic in origin, yet some cases of *p^{c}*- are hard to deny. Most probably, we are faced with an obscure conditioning.

Conclusion Uncertain.

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iv 82. ***քաղիրթ*** *k^{c}atirt^{c}*, *k^{c}atird* (*a*) 'tripe, entrails' (HAB IV: 544, Olsen 1999: 942, EDA 655–6, J̌ahowkyan 2010: 774).

Proposals A foreign word compared to Hsch. καλίδια· ἔντερα. Κύπριοι and Akk. *kalītu* 'kidney' (EDA 655–6). Beekes (2000: 31) adds this comparison to that of Gk. κόλον, χολάς, nom.pl χολάδες, χολίκες 'bowels', Hsch. γάλλια· ἔντερα; and RuCS *želudъkъ*, SCr. *žèludac* 'stomach'.

Discussion Arm. *k^{c}atirt^{c}* (quasi < **kalitH-reh$_2$-*) contains the additional suffix **-ro/eh$_2$-* added before the metathesis, probably by influence from *ənderk^{c}* 'entrails' (cf. EDA 656). We do find a parallel for an epenthetic *r* in the loanword *markeł* 'hoe', Gk. μάκελλα (iv 56). However, given the initial Arm. *k^{c}-* against κ- in καλίδια, it is most likely that the word was borrowed before the Armenian sound shift, unlike *markeł*, making it unlikely that the same type of epenthesis is at play here.

Although Gk. χολάς, χολάδες (< **g^{h}olnd-*) and Slavic **želǫdъkъ* < **g^{h}el-ond-* have a similar root structure and a suffix with a dental, the closest formal similarity is clearly with the Hesychian (Cypriot) form. In spite of the different meaning, Akk. *kalītu* is strikingly similar. Therefore, we may consider this word a plausible case of a borrowing from an unknown, Near Eastern language. The ultimate connection with the remaining forms remains very uncertain. If the suffix **-ond-* : *-nd-* implied by the Slavic and Greek forms is identical to the suffix found in *aṙowoyt* : Gk. ἐρέβινθος (iv 8), the form **-it^{h}-* implied by the Armenian form is strikingly close to the widespread Greek variant -ινθ- : -ιδ-, cf. also *gari* (iv 22) if < **g^{h}ər-it-*. Although it cannot be excluded that the protoforms **g^{h}el-ond-* and **kal-it^{h}-* are ultimately related, the only PIE background for PA *t^{h}* is **tH*. This is an additional cause for assuming that the word was borrowed into Armenian later, and is not directly relevant to the substrate of Europe.

Conclusion Non-IE *__kalit^{h}-__ (Arm) : *__kalid-__ (Cypr).

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IV 83. ք ա ր ի *k^{c}arb* (*i*) 'basilisk, asp (snake)' (HAB IV: 561, Olsen 1999: 101, EDA 656–8, J̌ahowkyan 2010: 778).

Proposals Compared to Gk. σκόρπιος 'scorpion, a sea-fish, prob. *Scorpaena scrofa*', σκορπίς, -ίδος 'a sea fish, *Scorpaena porcus*'. Traditionally connected to *√(*s*)*ker-* 'cut, scratch' (cf. Arm. *k^{c}erem*, *k^{c}orem* 'scratch') by assuming an extended root as in OE *sceorpan*, Ru. *skrestí* 'scrape, scratch', and perhaps Arm. (hapax) *k^{c}erbem* 'rub, flay' (HAB IV: 561).

The root etymology is rejected by Furnée (1972: 109 *et passim*) who gives such Greek variants as κάραβος 'horned beetle; crayfish', κηραφίς , -ίδος 'a kind of locust', and Hsch. σκορόβυλος· κάνθαρος (dung beetle) as evidence for a Pre-Greek origin (similarly Beekes 2010: 1359). Martirosyan (EDA 656–8) also assumes a foreign origin, adducing NP *karava* 'an animal whose bite is said to be worse than that of a serpent', Arab. *ʿaqrab* 'scorpion'. He assumes that the word was borrowed by Greek and Armenian at an early stage, being adopted into a hysterodynamic paradigm *__skórp-i-__ (whence σκόρπιος), *__skrp-i̯ós__ (*__krp-i̯os__ > Arm. *k^{c}arb*).

Discussion The Armenian form can in principle reflect *__k$^{(w)}$rp/b^{h}-i-__, but also *__su̯rp/b^{h}-i-__. The assumption that the word is a very early borrowing shared with Greek is complicated by the fact that Armenian shows no trace of initial *__s-__, the different meanings (the Armenian word refers neither to scorpions nor similar sea-creatures), and the potential variants in Greek suggesting more recent borrowings. It is impossible to exclude that the Armenian word was independently adopted from an Iranian source related to NP *karava* or from a Semitic source related to Arab. *ʿaqrab* (cf. also Syr. *ʿqrb* [*ʿe/aqraḇ*], *ʿqrbʾ* [*ʿe/aqa/ərḇā*], Heb. *ᶜaqrāḇ* 'scorpion'), but the semantic difference remains a problem. In conclusion, it is plausible that at least some of these forms reflect the same foreign word, but the input form and timing of the Armenian loan cannot be specified.

Conclusion Uncertain. ?***krp-i-**.

* * *

iv 84. ***քացախ*** *k^{c}ac^{c}ax* (*o*) 'vinegar' (HAB IV: 565, Olsen 1999: 949, EDA 659–60, J̌ahowkyan 2010: 780).

Proposals J̌ahowkyan (1987: 133) reconstructs **ku̯āt-so-*. The root has been connected with OCS *kvasъ* 'sourdough, kvass', *kysělu* 'sour', SCr. *kisati*, *kȉsati* 'turn sour, pickle, rise'; Skt. *kváth^{i}-* 'boil, bubble', Lat. *cāseus* 'cheese', and Go. *hvaþjan* 'foam'. On the other hand (1987: 354), J̌ahowkyan lists the word among examples of a foreign (perhaps Urartian) suffix *-ax*. Olsen (1999: 949 fn. 31) only hesitantly supports the direct comparison with the Slavic and Indic forms, proposing a formation **ku̯at$^{(h)}$ih$_2$ko-*. Martirosyan (EDA 660) considers the Slavic comparanda the most compelling and assumes that the suffix *-ax* belongs to the Mediterranean-Pontic substrate and accordingly, that an etymon **ku̯ats-* or *ku̯ać-* belongs to that language as well. He also adduces some comparanda in languages of the Caucasus, e.g. Avar *q̇:ança* 'vinegar' (sometimes considered a loanword from Armenian, cf. HAB IV: 565, J̌ahowkyan 1987: 607), and Ge. *ḳvet-* 'curdle', *ḳveti* 'rennet' (considered a loanword from PIE by Klimov 1994a: 180–1).

Discussion The etymology depends on the assumption that Arm. *k^{c}-* can reflect **ku̯-*. There is no other evidence for this, but it is of course likely that this cluster would have merged with **k^{w}-*. Arm. *k^{c}ac^{c}^{o}* may thus reflect **ku̯at(H)s-*. The best formal and semantic match is clearly provided by the Slavic forms (cf. also Ltv. *kûsât* 'boil'), but the reconstruction of a root is difficult. LIV^{2} (374; cf. IEW 627–8) reconstructs **ku̯ath$_2$-* 'bubble, foam up' on the basis of the Slavic, Indic and Germanic forms. However, the Slavic verb goes back to **kỳsati* with an acute that necessitates a reconstruction **kuHth$_2$-s-* (Derksen 2008: 266–7). It is therefore unlikely that this root is identical with that of Skt. *kváth^{i}-* < **ku̯etH-*, for which the best match is Go. *hvaþjan* < **ku̯otH-*. Lat. *cāseus* cannot have had initial **ku̯-* and must be unrelated to the Indic and Germanic forms. It is compared to the Slavic forms by Schrijver (1991: 252), who assumes a root **kHu-* from which a collective **kHu̯-ōs* yielded Latin **kau̯ōs-* >

**kaōs-* > *cās-*, but this does not solve all formal problems. Given the divergent meaning, the Latin form is probably a separate borrowing from an unknown source (cf. de Vaan 2008: 96–7).

The most serious obstruction to the comparison between the Armenian and Slavic forms remains the suffix *-ax*, however. I cannot accept the reconstruction **kṷat*$^{(h)}$*ih*$_2$*ko-* offered by Olsen (1999), as it curiously relies on the assumption of simultaneous breaking **-ih*$_2$*-* > **-i̯a-* and laryngeal aspiration **-h*$_2$*k-* > **-k*^{h}*-*. In general, words with an apparent suffix *-Vx* are not of Indo-European origin (cf. the problematic *glowx* 'head', IV 24). At the same time, while some instances of this suffix may reflect the Urartian nominal suffix *-u̯ə*, there is no compelling reason to assume that all examples of *-Vx* have a singular origin. It is unlikely to be associated with a European substrate language because of its absence in other IE languages.

Ačaŕyan (HAB IV: 565) considers Ge. *ḳaçaxi* 'sour, unripe' to be a loan from Armenian. This is problematic given the mismatch between Armenian aspirates and Georgian ejectives (the expected form would be ***kacaxi*). For the same reason, a direct borrowing in the other direction can be excluded as well. However, it also seems unlikely that the Georgian and Armenian forms are entirely unrelated. The Georgian word has the variants Ge. *ḳoçaxi*, *ḳoçmaxi*, *ḳoçamaxi* 'very sour'. At the same time, *ḳo-çmaxi* ostensibly looks like a derivation from the root of Ge. *çmaxe* 'turned sour', *çmaxi* 'pickles'. There is no Ge. prefix ***ḳa-*, but assuming that these forms are Zanisms, we may be looking at the Megrelian affirmative, and sometimes perfectivizing, particle *ko-*, although this would admittedly require an assimilation **ko-çmax-* > **ḳo-çmax-*. There seems to be no clear solution to this problem, but in any case, we can assume that the etymon has a deeper history in Kartvelian and reached Armenian, probably through an unknown medium, from there.

The Nakh-Daghestanian forms adduced by J̌ahowkyan (1987: 607) are Dargwa *ġanç* (Kaitag dial. *ġaç*), Avar, Archi, Khvarshi *ġ:ança*, Ch. *ġonza*. These forms appear to have spread via Avar, perhaps originally from Dargwa, but the word must be natively Daghestanian in view of Lak *ġ:určči-* 'sour, bitter' Nikolayev & Starostin 1994: 521. Thus, the assumption of a loanword from Armenian is flawed. Given the formal discrepancies, especially *ġ:* versus *ḳ-*, it is uncertain whether they can be related to the Georgian forms.

Conclusion Uncertain. Rather from a language of the Caucasus than of Europe.

* * *

iv 85. *քուպիճ kᶜowpič* 'a male type of hawk or falcon' (HAB IV: 593, J̌ahowkyan 2010: 787). Dis legomenon in the commentaries on Dionysius Thrax by Grigor Magistros and Yovhannēs Erznkacᶜi (Adonc 1915: 240; cf. Greppin 1978: 67–8).

> *Եւ բազէի արական ճուրակ [...] իսկ շանեւի և գաւազի քուպիճ. և յայտնի նշանակութիւն, զի ոչ ուրուք այլոց հաուց լինի քուպիճ անուն։*
>
> The male of a *bazē* (goshawk) is a *čowrak*, [...] and [the male] of a *šahēn* (peregrine falcon) and a *gawaz* (a type of hawk) is a *kᶜowpič*; and the meaning is clear, for *kᶜowpič* is not the name of any other birds.

Proposals The word is recorded in HAB, Greppin 1978: 67, and J̌ahowkyan 2010, but no etymologies are offered.

Discussion A mechanical reconstruction leads to **koubig-i̯V-*. The stem **koubig-* is highly similar to a group of forms in Germanic and Slavic. PGm. **habuka-* (ON *haukr*, OE *hafoc*, *hafuc*, *heafoc*, OHG *habuh* 'hawk') can reflect quasi-IE **ko/abʰug/ǵ-* or **ko/apúg/ǵ-*. The most relevant Slavic forms are Pol. *kobuz* (Old Pol. *kobz*) 'hobby' and Upper Sorbian *kobušk* 'red-footed falcon'. Other Slavic forms reflect **kobьcь* (SCr. *kòbac* 'merlin', ORu. *kobecь* 'merlin', Sln. (*s*)*kóbəc* 'sparrowhawk'), but these may have acquired the diminutive suffix *-ьcь* secondarily (cf. also Ru. *kóbčik* 'red-footed falcon'). The Polish and Sorbian forms on the other hand, cannot be analyzed as intra-Slavic derivations, but go back to quasi-IE *ko/abʰoug(ʰ)-*.[106] An ablauting suffix **-oug(ʰ)-*, **-ug(ʰ)-* is not known to PIE and additionally, the root

[106] I owe this observation to Anthony Jakob (p.c.), who further notes that Ru. dial. "*kobéz*", as if from **kobъzъ* (ÈSSJa X: 92), apparently does not exist, and that the form *kóbuz* is not actually Russian but only appears in a Ukranian glossary, which makes it possible that it represents a loan from Polish.

*kVb^h- has an illegal structure with tenuis and MA. This suggests that the word is non-IE (Boutkan 1998: 125, Kroonen 2013: 197, Šorgo 2020: 440)

The Germanic and Slavic forms are sometimes compared to Late Lat. *capys* 'falcon' which would reflect a root variant **kap-*.[107] The word is only reliably attested in Servius' commentary on the Aeneid, where it is ascribed to Etruscan (despite Kroonen 2013: 197, Šorgo 2020: 440, the Etruscan word is unattested, however). Isidore spells it *capus* and does not consider it Etruscan, but he may have confused it with the originally distinct *capus* in the sense 'capon' (Ernout & Meillet 1951: 176). If the word is native after all, it may have been based on the verbal root *cap-* (< **keh$_2$p-*, LIV^2 344–5). Orel (1998: 107–8) compares PAlb. **gabā*, found in *sh-kabë* 'eagle, vulture' and *gab-onjë* 'eagle', but this may be a Romance borrowing (Jokl 1923: 303–6). The only reliable comparanda are thus the Germanic and Slavic forms. Based on the Armenian form with the root vowel **ou*, it can be considered more likely that the input of the Germanic-Slavic forms had the root vowel **o*. We can thus reconstruct the main root alternants **koub-* and **kob^h-*. Final *-ič* can continue **-ig-i̯V-* as opposed to a suffix with *u*-vocalism elsewhere. However, it cannot be excluded that the ending was secondarily affected by the suffix **-ič* which appears to have had limited productivity at some point, cf. *karič* 'scorpion' from *kor* 'id.' (IV 49) and *dařnič* 'endive' from *dařn* 'bitter' (Greppin 1975: 96–7). The limited and relatively late attestation of the Armenian word can be explained by its highly specialized semantics, which became limited to male individuals of specific hunting birds. The comparison with Germanic and Slavic makes it likely that it in fact reflects a very old loanword adopted when the ancestor of Armenian was still spoken in Europe.

Conclusion Non-IE ***koubig-** (Arm) : ***kob^{h}ug-** (Gmc) : ***kob^{h}ouǵ-** (Sl)

* * *

[107] Suolahti (1909: 359–62) assumes that PGm. **habuka-*, similarly to the Latin word, is based on **hab-* 'grab' (< **keh$_2$p-*), but **-uk-* was hardly a productive suffix in Germanic. The Slavic forms, in particular the Polish and Sorbian, cannot be explained as Germanic loans because there is no way to explain the suffix **-úzъ* as a late addition.

4.5 Results

4.5.1 Accepted substrate words

A total of 43 accepted and new (in boldface) proposals for prehistoric loanwords from unknown, non-IE languages in Europe are presented in Table 4.1 along with their quasi-IE input and distribution.[108]

4.5.2 Uncertain substrate words

This small category includes words for which a substrate origin is possible, but cannot be decisively demonstrated.

IV 39: *lar* 'rope, string'.
IV 50: *kostl*(*i*) 'bird lime, holly'.
IV 79: *c*^{c}*ank* 'hedge'.
IV 81: *p*^{c}*k*^{c}*in* 'dart'.
IV 83: *k*^{c}*arb* 'basilisk, asp'.

4.5.3 Rejected substrate words

Rejected proposals for substrate words generally fall into three categories, which are of approximately equal size. The first, and hardest to positively reject, are words with a limited georgraphic distribution, which do, however, not show any irregular correspondences or phonotactic inconsistencies that allow us to exclude that they are preserved archaisms. The second group consists of words, which we can consider borrowings, but which do have comparanda in other Indo-European languages. This prohibits us from concluding that they are prehistoric. The final group of words find no compelling comparanda, making it impossible to establish an etymology.

4.5.3.1 Inherited roots

This category consists of words that find regular cognates and for which a PIE root can be identified. These roots conform to PIE

[108] Abbreviations used in the following: Al = Albanian, An = Anatolian, B = Baltic, C = Celtic, Gm = Germanic, I = Italic, S = Slavic.

Form	Meaning	Input analysis	Distribution
ayc	goat	**aiǵ-**	Gk, Al, B, S, IIr
ant^{c}-	coal, ember	**ant^{h}-**	Gk
ar̊owoyt	**alfalfa**	**or̊ob^{h}-oud-**	Gk, I, Gm, C
artoyt	**lark**	**droud-**	Gk, I, Gm, B, S, C
awaz	sand	**sab^{h}ad^{h}-s**	Gk, I, Gm
bołk	radish	**bolg^{w}-**	Gk, Al
boc^{c}	flame	**b^{h}ok-s**	I
bowrgn	tower	**b^{h}urg^{h}-**	Gk
gari	barley	**g^{h}ərit-**	Gk, Al, I, Gm
ewł	oil	**elu-**	Gk, ?I
t^{c}arp^{c}	basket	**t(a)rp-**	Gk
t^{c}eli	elm	**ptel-**	Gk, C, ?I
t^{c}owz	fig	**tuK-**	Gk, I, ?An
t^{c}owmb	dam	**tump/b^{h}-**	Gk
t^{c}owp^{c}	bush	**t$^{(h)}$up^{h}-**	Gk
inj	leopard	**sinǵ^{h}-**	Indic
*lowsan**	lynx	**l(o)u(n)Ḱ-**	Gk, Gm, B, S
xstor, sxtor	garlic	**s$_2$k^{h}udor-**	Gk, Al
cłxni	hinge	**ǵik^{h}luN-**	Gk
**kałc^{c}*	milk	**g(a)l(K)t-**	Gk, I
kamowrǰ	bridge	**g^{w}h$_1$b^{h}ur-**	Gk
kask(*eni*)	chestnut	**Kast-**	Gk
karb	?maple	**gab^{h}r-**	Gk, I, S
kor, karič	scorpion	**kor-**	Gk
jag	bird	**ǵ^{h}u̯āg$^{(w)h}$-**	Al
jałk	rod, stick	**ǵ^{h}alg-**	Gm, B
markeł	hoe	**marg-el-**	Gk
mozi	bullock, calf	**mosǵ^{h}-**	Gk
mor	blackberry	**mor-**	Gk, ?I, ?Gm
mowx	smoke	**smŭk^{h}-**	Gk, Gm, C
niẇ	**mustard**	**nēp-**	Gk, ?I
oloŕn	pea	**olor-**	Gk
ospn	lentil	**osp-n-**	Gk
pal/ł	rock	**bal-es-**	Gk, ?Al, Gm, C
sat^{c}	**amber**	**Ḱnt-**	B, S
salam(*b*)	game bird	**Ḱolmb^{h}-**	I, S
sayl	cart	**s$_2$atil-**	Gk
sex	melon (gourd)	**s$_2$ek^{h}-**	Gk, ?I, ?S
siseŕn	chickpea	**Ḱeiḱer-**	Gk, I, Al
siẇn	column	**Ḱiu̯ōm**	Gk
tik	goatskin	**dig-**	Gm
k^{c}ałirt^{c}	tripe	**kalit^{h}-**	Gk
k^{c}owpič	**hawk**	**koubig-**	Gm, S

Table 4.1: Accepted and new proposals of substrate words

phonotactics. Sometimes, however, their reflexes have a limited distribution in the other Indo-European languages, which can render it impossible to decide between an archaism or a very early loanword.

IV 3: *ałowes* 'fox'.
IV 7: *anowrǰ* 'dream'.
IV 10: *argat* 'cut-off branches'.
IV 11: *artewan*(*ownkᶜ*) 'eyelash, brow'.
IV 14: *awjikᶜ* 'collar'.
IV 23: *geran* 'beam, log'.
IV 25: *gom* 'stable'.
IV 26: *dalar* 'green'.
IV 27: *damban* 'tomb'.
IV 29: *dowrgn* 'potter's wheel'.
IV 30: *erbowc* 'breast of animals'.
IV 32: *tᶜaṙ* 'perch'.
IV 52: *hast* 'firm'.
IV 62: *nay* 'wet(ness)'.
IV 77: *tawn* 'feast'.

4.5.3.2 Local loanwords

For nine words in the material, I propose that they are most likely to be borrowings from local Caucasian and Near Eastern sources, or from Greek. I conventionally call these 'local loanwords', meaning that they were adopted when Armenian was already spoken in, or very close to, its historical area. In most cases, it is possible to infer the donor language. In the case of *kᶜacᶜax*, local origin is inferred on the basis of highly similar, yet incompatible forms in the Kartvelian languages.

IV 2: *aławni* 'dove' ← Lezgic **ləf* or **ləẋʷ*.
IV 21: *bowrd* 'wool, *lump, mass' ← Ge. *burdo* 'chaff'.
IV 28: *darbin* 'smith' ← Urartian **dabrinə*.
IV 44: *kałamax* 'white poplar, aspen' ← Daghestanian.
IV 67: *ǰnar* 'lyre' ?← Urartian.
IV 70: *santr* 'comb' ?← Gk. *ξάντρον.
IV 76: *sring* 'pipe' ← Gk. σῦριγξ.
IV 75: *sownk* 'mushroom' ← Daghestanian **sonḳV-* vel sim.
IV 84: *kᶜacᶜax* 'vinegar' ←?

4.5.3.3 No comparanda

This category consists of words that have no compelling comparanda anywhere. Again, the symbol "←?" marks those forms that are unlikely to be inherited on the basis of phonological or morphological structure and therefore borrowed fron an unknown (probably local) source.

IV 1: *azdr* 'thigh, back'.
IV 9: *arat**. The meaning is not clear.
IV 15: *akᶜis* 'weasel'. Suffix *-*ēḱ*-?
IV 16: *blowr* 'hill'.
IV 17: **boxi* 'hornbeam' ←?
IV 24: *glowx* 'head' ←?
IV 51: *kori* 'drain'.
IV 53: *hecᶜ*, *xecᶜ* 'rim of a wheel' ←?
IV 57: *meɫex* 'handle' ←?
IV 60: *morm* 'tarantula'.
IV 80: *cᶜancᶜ* 'net'.

4.6 Analysis

First of all, on the basis of the corpus presented in Table 4.1, it is possible to identify several recurring phonemic alternations, as well as morphological features.

4.6.1 *ou ∞ *o/u

An alternation of a quasi-IE diphthong ***ou** against ***o** or ***u** can be observed in three examples. A potential additional example is *lowsan*(*n*)* 'lynx' (IV 41) which can reflect **lou*(*n*)*ḱ*- (> ***loys*) against **lu*(*n*)*ḱ*- elsewhere. However, the attestation of the word is scarce, and folk-etymological association with the word *loys* 'light' may have affected its development. A potential example showing an alternation ***ei** ∞ ***i** is the word *siseṙn* < **ḱeiḱer*- (IV 73), but due to its isolation we cannot generalize too much on its basis.

IV 12: ***droud**- and ***stroud^{h}**- (Gk) : ***trosd** (vel sim.) (I, C, B, S, Gm).
IV 85: ***koub**- : ***kob^{h}**- (Gm, S).
IV 8: suffix *-**oud**- : *-**ud^{h}**- (Gk) or *-**ud**- (S, Gm).

4.6.2 *D^{h} ∞ *D

An alternation of quasi-IE *mediae aspiratae* and *mediae* is observed in eight examples. Notably, all of them have a wide, but inconsistent, distribution. In five of the cases, a *media* is found in Armenian against a *media aspirata* elsewhere. In the three other cases, Armenian points to a *media aspirata*. It is remarkable that most of these etyma have a rather wide distribution among the European branches, suggesting that they belong to a relatively old stratum.

IV 8: *-**oud**- : *-**ud^{h}**- (Gk).
IV 12: ***droud**- : ***stroud^{h}**- (Gk).
IV 55: ***ǵ^{h}alg**- : ***ǵ^{h}alg^{h}**- (Gm, B).
IV 78: ***dig**- : ***dig^{h}**- (Gm).
IV 85: ***koub**- : ***kob^{h}**- (Gm, S).
IV 48: ***gab^{h}r**- : ***grabr**- (S).
IV 36: ***tumb^{h}**- or ***tump**- : ***tumb**- (Gk, C).
IV 20: ***b^{h}urg^{h}**- : ***purg**- or ***p^{h}urk**- (Gk).

4.6.3 Tenues aspiratae

In a number of non-IE loanwords, the Armenian form calls for the reconstruction of *tenues aspiratae*, usually alternating with non-aspirated stops in forms in other branches. It is usually assumed that the *tenues aspiratae* emerged relatively late in the development of Armenian (cf. Ravnæs 1991: 128–32). This is consistent with the observation that most of the examples below only have comparanda in Greek and Albanian. As a consequence, we can assume that they are relative late, independent loans into each branch. As an exception, the word ***(s)muk^{h}**- (Arm. *mowx*) has comparanda in Germanic and Celtic as well. Because the Celtic form may go back to **mukH*-, it is possible to assume that Armenian **k^{h}* in this example reflects a cluster **kH* as well. For the forms ***s$_{2}$ek^{h}**- and ***s$_{2}$k^{h}udor**-, however, this assumption is difficult to maintain, because these words were adopted with secondary **s$_{2}$*, i.e. after the shift of PIE **s* > *h* in both Armenian and Greek. The example ***kalit^{h}**- was presumably adopted after the Armenian sound shift, although an alternant ***galit**- cannot be definitively excluded.

IV 37: *$\mathbf{t^{(h)}up^h}$- (Arm, Gk).
IV 5: *$\mathbf{ant^h}$- (Arm, Gk).
IV 82: *$\mathbf{kalit^h}$- : ***kalid**- (Cypr).
IV 43: *$\mathbf{ǵik^hlum}$- or *$\mathbf{ǵilk^hum}$- : ***giglum**- (Gk).
IV 72: *$\mathbf{s_2ek^h}$- : *$\mathbf{s_2ik}$- (Gk).
IV 42: *$\mathbf{s_2k^hudor}$- : *$\mathbf{skor(o)d}$- (Gk, Alb).
IV 61: *$\mathbf{(s)muk^h}$- : *$\mathbf{smug^h}$- (Gm) : *$\mathbf{muk(H)}$- (C)

4.6.4 *VsC ∞ *VC

This potential alternation is observed in only two forms. Additional material is required to confirm its relevance, but the relatively wide and consistent distribution of both forms is noteworthy.

IV 12: *$\mathbf{droud}$- (Arm, Gk) : *$\mathbf{Trozd}$- (I, Gm, B, S, C)
IV 22: *$\mathbf{g^h(ə)riT}$- (Arm, Gk) : *$\mathbf{g^hersd}$- (I, Gm)

4.6.5 Relative chronology

In contrast with the loanwords discussed in the previous two chapters, the linguistic stage at which Proto-Armenian borrowed these words is not clearly distinguishable from Proto-Indo-European. In other words, the adoption of these words appear to have begun before any identifiable sound changes had taken place. Still, it is a necessary presumption that the dialects of Proto-Indo-European had already diverged to such a degree that they constituted discrete speech communities, since otherwise, foreign words would not have been borrowed in different forms. Loanwords that must have been adopted after the emergence, in Proto-Armenian, of *tenues aspiratae* and the secondary *s_2 in Armenian and Greek, are naturally later, and suggest that the shared contact between one or more non-IE languages, by Armenian, Greek, and probably Albanian, took place over a relatively prolonged period of time (cf. Martirosyan 2013: 123).

4.6.6 Root nouns

In five cases, the Armenian form can be analyzed as reflecting the NOM.SG of an original root noun. This level of preservation is generally rare in Armenian, where the original NOM.SG has either been

ousted by the ACC.SG (e.g. *otn* 'foot' < **podm*) or the entire noun transferred to a vocalic class, typically *i*- or *o*-stems (see Olsen 1999: 815–9). This observation thus suggests that these words belong to an older layer of loans. This ties in with the fact that these words do not belong to a particularly technical register, or to the agricultural lexicon, but rather to the domain of animal husbandry ('goat', 'milk') or the basic vocabulary ('sand', 'flame').

IV 4: ***aiǵ**-
IV 13: ***sab^{h}ad^{h}**-
IV 19: ***boḱ**-
IV 45: ***g(a)lKt**-

4.6.7 Semantics

The words in this corpus have mainly been accepted on formal criteria. On that background, it is striking to observe that nearly all of them have meanings that are typical of loanwords. This contrasts with several of the meanings found among rejected words (§ 4.5.3) such as 'green', 'firm', and 'wetness'. On the whole, this finding seems to support that the formal criteria established for detecting foreign words among a reconstructed corpus are fundamentally useful and valid. The etyma can be distributed among broad semantic categories as follows.

- **Flora incl. crops** (15 ≈ 35 %): *ařowoyt* 'alfafa', *bołk* 'radish', *gari* 'barley', *t^{c}eli* 'elm', *t^{c}owz* 'fig', *t^{c}owp^{c}* 'bush', *xstor* 'garlic', *kask* 'chestnut', *karb* 'maple (?)', *mor* 'blackberry', *niw* 'mustard', *oloṙn* 'pea', *ospn* 'lentil', *sex* 'melon', *siseṙn* 'chickpea'.
- **Fauna** (11 ≈ 26 %): *ayc* 'goat', *artoyt* 'lark', *inj* 'leopard', *lowsan** 'lynx', *kor, karič* 'scorpion', *jag* 'small bird', *mozi* 'bullock', *salam*(*b*) 'game bird', *tik* 'goatskin', *k^{c}atirt^{c}* 'tripe', *k^{c}owpič* 'hawk'.
- **Technical terms** (9 ≈ 21 %): *bowrgn* 'tower', *t^{c}arp^{c}* 'basket', *t^{c}owmb* 'dam', *cłxni* 'hinge', *kamowrǰ* 'bridge', *jałk* 'rod, stick', *markeł* 'hoe', *sayl* 'cart', *siwn* 'pillar'.
- **The natural world** (6 ≈ 14 %): *ant^{c}*- 'coal, ember', *awaz* 'sand', *boc^{c}* 'flame', *mowx* 'smoke', *pal/ł* 'stone', *sat^{c}* 'amber'.
- **Secondary products** (2 ≈ 5 %): *ewł* '(olive) oil', **kałc^{c}* 'milk'.

For the purpose of narrowing down when and where these loanwords were adopted, meanings connected with early agriculture, viz. 'barley', 'pea', 'chickpea', 'alfalfa (= a pulse)', and 'lentil', are particularly relevant. As a case in point, the chickpea (*Cicer arietinum*) belongs to the Neolithic founder crops, and seeds of a domesticated variant are found as early as the 10th millennium BCE at Jericho. The crop subsequently spread into Europe, but the distribution never reached beyond the coastal Mediterranean zone (Zohary, Hopf & Weiss 2012: 89). If the etymon ***ǰeiǰer-** was adopted by Italic, Greek, and Armenian speakers while these IE dialects were spoken in close proximity, which seems likely on a linguistic basis, it would suggest that they were spoken in the southernmost part of the Balkan peninsula. However, since other linguistic evidence rather supports a more Central European movement of the Italic branch, by vector of the Corded Ware culture (see Wigman 2023), it is more likely that the etyma ***ǰeiǰer-** originally referred to a slightly different crop, such as the grass pea or chickling vetch (*Lathyrus sativus*). This plant appears to have been domesticated in the Balkans, but it also spread north of the peninsula, making a transmission to Indo-European speakers of the 3rd millenium more likely (Darden 2013). As Italic, Greek, and Armenian speakers subsequently migrated into areas where the cultivation of chickpea is possible, the use of the "inferior" grass pea presumably became marginalized, explaining the independent semantic shifts of the word ***ǰeiǰer-**. A similar temporal and geographic context could explain the spread of the lemma ***oṙobʰoud-** (vel sim.), designating some kind of pulse. Apart from Italic, Greek, and Armenian, it also found its way to Germanic. It thus seems likely that these languages can be seen as part of the already diversified 'core' of Indo-European languages that went through a gradual transition to an agricultural economy, starting from around 3300 BCE, and in the process, both innovated new words from inherited material and adopted loanwords from unknown languages, whose speakers were more familiar with agriculture (cf. Kroonen et al. 2022).

Turning to the more narrowly distributed vocabulary, shared by Armenian and Greek, we observe an interesting prevalence of terms related to a more Mediterranean ecosphere, viz. 'garlic', 'fig' (also shared with Italic), 'melon', and 'olive/oil', as well as additional words out of the Neolithic package, viz. 'pea' and 'lentil'. This fact would seem to lend credence to the traditional assump-

tion of a strictly "Mediterranean substratum" (Meillet 1908–1909), supporting the widespread idea that the precursor of Armenian was spoken somewhere in the lower Balkans before moving to the east (Tomaschek 1893: 4, Diakonoff 1964, Fortson 2010: 382). On the other hand, formal observations lead to the conclusion that these etyma are also among the most phonologically divergent. It is neither imperative, nor possible to reconstruct nearly similar protoforms that would, in turn, indicate that these words were adopted into Greek and Armenian while they were spoken in close proximity. Rather, in the case of *$\mathbf{s_2k^hudor}$- 'garlic' and *$\mathbf{s_2ek^h}$- 'melon', we meet a dead end at the reconstruction of secondary *s_2 and *tenues aspiratae*, arguably features of late Indo-European dialects, not Proto-Indo-European. In other words, we might here be faced with early *Wanderwörter* spreading along an east–west trajectory, passing along both Armenian, Greek, and eventually making it to Italic. To the same stream of words, we may adduce such metallurgical words as Lat. *faber* 'smith', which may be indirectly related to Arm. *darbin* 'smith', and Lat. *ferrum* 'iron', potentially related to Sv. *berež* 'iron' (see II 2 and Thorsø, Wigman et al. 2023: 111–2). In the case of *$\mathbf{s_2ek^h}$- 'melon' as well as *$\mathbf{s_2atil}$- 'cart', the assumption of east–west *Wanderwörter* is additionally supported by the existence of potentially related words in the Kartvelian languages.

We are thus forced to count on at least two chronological strata, as also observed by Martirosyan (2013: 122–3). Faced with the remaining set of substrate words shared by Armenian, Greek, and frequently other languages within the aforementioned core of Indo-European, we find meanings that do not necessarily center on a particular geographic area, e.g. bird names like 'lark' and 'hawk'. On the other hand, a certain set of borrowed architectural terms shared exclusively by Greek and Armenian, viz. 'tower', 'bridge', 'dam', 'pillar', point to a relatively late stage of contact-induced technical innovation among 'Graeco-Armenian' speakers. The Late Yamnaya and Catacomb cultures (ca. 2800–2200 BCE) of the western Pontic Steppe could tentatively be suggested as suitable material contexts for these linguistic events (cf. Anthony 2007: 369).

4.6.8 Geographical distribution

The geographic distribution of etyma is presented in Table 4.2. The retention of lexemes in any given language is in essence

arbitrary, and there is a high risk that the observed distribution only partly reflects the original spread of these lexemes. Nevertheless, some observations can be made. The extremely significant overlap between Armenian and Greek can hardly be coincidental, but appears to reflect the fact that the predecessors of these languages were in joint contact with one or more non-Indo-European languages, as mentioned above.

Apart from the lexemes shared between Armenian and Greek alone, these languages also share lexemes of a wider distribution, in particular including Italic and Germanic – secondarily Celtic. Again, this draws the tentative picture of an linguistic contact zone centering upon Armenian and Greek. Remaining Core Indo-European languages, in particular Italic, Celtic, and Germanic initially adopt words within this same contact zone, but presumably migrate out of it before Armenian and Greek become geographically removed from one another. This is particularly confirmed by the presence, noted above, of words with *tenues aspiratae* and the secondary sibilant $*s_2$, which are shared exclusively by Armenian, Greek, and Albanian, and must represent relatively late loanwords. The presumption of a fundamental border in the linguistic landscape, separating the South-East from the North-West is additionally supported by the distribution of forms with the cluster *-*VC*- against *-*VsC*-.

Greek	35	81 %
Italic	10 (+5)	23–35 %
Germanic	10 (+1)	23–26 %
Balto-Slavic	8 (+1)	19–21 %
Albanian	6 (+1)	14–16 %
Celtic	5	12 %
Indo-Iranian	2	5 %
Anatolian	(1?)	0–2 %

Table 4.2: Geographical overlap of substrate words

Evaluation and outlook 5

The primary purpose of this work is the critical evaluation and delimitation of three loanword corpora in Armenian, each representing distinct linguistic contact events in the prehistory of this language. The secondary purpose is to determine to what extent this data may inform our knowledge about the prehistory of Armenian speaking populations, in particular their movements and the timing of those. The linguistic data demonstrates the relative sequence of contact events. Subsequently, informed guesses can be made with regard to the absolute dating of these events, as well as the geographic location of Armenian at the time.

The youngest of these prehistoric events is the contact between Armenian and Urartian. It took place before the introduction of Iranian loanwords but after most sound changes, including the Armenian sound shift, had taken place. This linguistic observation is consistent with the assumption that the Urartian loanwords are all contemporaneous with the existence of the Urartian Kingdom from ca. 860–590 BCE.

The study of the contact between Armenian and Kartvelian languages presents a complex and multifaceted picture. Contact with the Zan languages stretches up until the historical period but appears to have begun already while these languages were beginning to diverge from their closest predecessor, Georgian-

Zan. A single lexical item, Arm. *cov* 'sea', suggests that contact may have taken place before the Armenian sound shift, but the lack of parallels precludes a firm conclusion. With regard to the relative dating, the Armenian influence upon Kartvelian languages provides stronger evidence (see also Thorsø 2022). The Armenian loanwords into Georgian and Georgian-Zan must have taken place well before the adoption of Urartian loanwords, probably already in the latter half of the second millennium BCE. Unless we assume that Kartvelian languages were, at this time, spoken far from their historically attested location, it suggests that already in the second millennium, Proto-Armenian was spoken in the Southern Caucasus.

This conclusion casts considerable doubt on the traditionally favoured hypothesis of how Armenian was introduced to its historical area. This hypothesis states that Armenian speakers migrated from the Balkans and into Eastern Anatolia only after the collapse of the Hittite Empire around 1200 BCE (Tomaschek 1893: 4, Brandenstein 1961, Diakonoff 1964, Burney & Lang 1971, Mallory 1989: 33–5, Fortson 2010: 382). Fundamentally, the Balkan Hypothesis relies on statements of ancient historians like Herodotus[1] and Eudoxus[2] that Armenians were (closely related to) Phrygians or had come from Phrygia. The Balkan Hypothesis also helps explain why there is no historical record of an Armenian nation or ethnos before the sixth century BCE. On the other hand, if Armenian speakers were present close to Kartvelian speakers already in the second millennium, it appears doubtful that they migrated across Anatolia, since these migrations would have been recorded in Hittite, Luwian, or Assyrian sources. In any case, the material evidence for a migration of Indo-European speaking people from somewhere in the Balkans or Western Anatolia in the Early Iron Age is virtually non-existent. As for the evidence of linguistic phylogeny, the relationship between Armenian and Phrygian appears much more distant than it did to many scholars of the early twentieth century, and there is now broad consensus that the closest relative of Phrygian is not Armenian, but Greek (Obrador-Cursach 2019).

[1] *Histories* 7.73: Ἀρμένιοι δὲ κατά περ Φρύγες ἐσεσάχατο, ἐόντες Φρυγῶν ἄποικοι (The Armenians were armed like the Phrygians, being Phrygian colonists).

[2] Attested only in Stephanus Byzantius, *Ethnica*, s.v. Armenia: Ἀρμένιοι δὲ τὸ γένος ἐκ Φρυγίας καὶ τῇ φωνῇ πολλὰ φρυγίζουσιν (As for their origin, the Armenians are from Phrygia and they speak much like Phrygians).

At the same time, it may be justified to assume that Armenian was spoken north of Urartu, when the latter emerged as a local power. The events of the Southern Caucasus were virtually undocumented at this time, but Urartian and Assyrian sources tell of rival confederations here, such as the Etiuni, with whom they were in frequent conflict. This tribe or 'kingdom' may even have played a decisive role in the eventual downfall of Urartu (see Petrosyan 2018: 158–65 for an overview). More importantly, a movement of plausibly Indo-European-speaking people from the Pontic-Caspian steppe and into this area can be documented already from the Middle Bronze Age, with the emergence of the Trialeti-Vanajor culture (ca. 2100–1700) BCE. This event was a dramatic transition from the sedentary, agricultural, and largely egalitarian Kura-Araxes culture to a nomadic, pastoralist, and socially stratified economy (Sagona 2017: 309–13, Drews 2017: 89–92, Kristiansen 2018: 113–5). This is also the period when the Armenian Highlands see the emergence of the *višapakᶜarer* 'dragon stones' (Barseghian 1968). These curious, zoomorphic stone stelae may be interpreted in the context of a cultic ritual with clear Indo-European elements (Martirosyan 2015). Their connection with the Trialeti seems highly likely but is yet to be established. In any case, the introduction of Trialeti-Vanajor can only be seen as a major social turnover which serves as a plausible staging area for language contact and language shift. From the point of view of ancient DNA, Lazaridis et al. (2022b) are able to demonstrate an admixture of approximately fifteen per cent ancestry associated with the Yamnaya culture of the Pontic-Caspian steppe at this point in time. From around 1500 BCE, the Trialeti-Vanajor culture is gradually replaced by the similar Lčašen-Mecamor culture, whose territory around Lake Sevan plausibly overlaps with that of the aforementioned Etiuni (Diakonoff 1964: 7, Avetisyan et al. 2019). We are thus able to glimpse a more or less direct line from people living at the outskirts of the Urartian empire in the early first millennium BCE to the Yamnaya culture of the third millennium BCE, whose people were most plausibly speaking Indo-European languages (Schrader 1883, Mallory 1989, Anthony 2007). On the basis of linguistic data, this route through the Caucasus around 2000 BCE is the most likely vector for the introduction of Armenian into its historical area.

The third layer of loanwords evaluated in this work clearly represents the oldest. It testifies to a prolonged contact between Armenian and one or more unclassified, non-IE languages. This

contact event predated all or most Armenian sound changes. Crucially, most other Indo-European languages, with the exception of Anatolian and Tocharian, were to some degree in contact with the same stratum. These facts, taken together, suggest that this period of language contact must have begun relatively shortly after the dissolution of the Core Indo-European languages. Therefore, it most likely represents contact between speakers still residing near the Indo-European homeland, and speakers of those languages neighbouring them. It seems clear that Armenian, Greek, and Albanian remained in close contact with the same language(s) for the longest period of time. This is consistent with the data showing that these languages shared innovations on the basis of inherited material as well (Matzinger 2012, Lamberterie 2013, Olsen & Thorsø 2022). At the same time, there is also a considerable overlap between non-Indo-European vocabulary in Armenian and that found in Germanic, Italic and Celtic. Among these loanwords are terms for agricultural crops, like 'barley' and 'some pulse' (> Arm. 'alfalfa'), indicating that Proto-Armenian existed within the core of Indo-European languages whose speakers migrated Westward across the steppe and went through a gradual transition from a completely herding-based economy to a more sedentary culture with elements of agriculture, starting from around 3300 BCE (cf. Kroonen et al. 2022). Nevertheless, Armenian does not share as much foreign agricultural vocabulary with Germanic, Italic, and Celtic as these languages do with one another. Thus, there is reason to believe that its speakers did not take part in those population movements that later gave rise to the Corded Ware and Bell Beaker cultures in Europe. Again, given that population movements around 2000 BCE are a plausible vector for the movement of Proto-Armenian speakers into the Caucasus, it is tempting to preliminarily locate these Proto-Armenian speakers somewhere in the Late Yamnaya and perhaps in the Catacomb culture, which emerges from Yamnaya starting around 2500 BCE. Future studies combining linguistic, archaeological, and genetic evidence will hopefully be able to confirm or reject this hypothesis.

With respect to its origin, the Armenian lexicon is highly variegated and complex, and a large part of it remains obscure. While this work has hopefully advanced the understanding of this lexicon, it should also serve to accentuate the need for much more work within the field of loanwords. Obviously, future studies need not

only follow the same roads that this study has taken. There are many other potential foreign sources of Armenian words. These might include 'substrate words' shared with Anatolian languages and non-IE languages of Western Asia; direct loanwords from Nakh-Daghestanian and Abkhaz-Adyge languages, as well as words of completely unknown origin, which may however still be classified according to formal and semantic criteria. Obviously, many inherited words may still be uncovered as well. With the advancement of these studies, Armenian and Indo-European studies will surely see advancement as a whole.

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Abaev	V. I. Abaev. 1958–1989. *Istoriko-etimologičeskij slovar' osetinskogo jazyka*. 4 vols. Leningrad: Nauka.
ALEW^{2}	Wolfgang Hock et al. (eds.) 2022. *Altlitauisches etymologisches Wörterbuch*. Version 2.0. `http://alew.hu-berlin.de`.
BGH	Thomas Richter. 2012. *Bibliographisches Glossar des Hurritischen*. Wiesbaden: Harrassowitz.
CAD	Robert D. Biggs, John A. Brinkman, Miguel Civil, Walter Farber, Ignace J. Gelb, A. Leo Oppenheim, Erica Reiner, Martha T. Roth & Matthew W. Stolper. 1956–2010. *The Assyrian Dictionary of the Oriental Institute of the University of Chicago*. 21 vols. Chicago, IL: The Oriental Institute of the University of Chicago.
Ciakciak	P. Emanuele Ciakciak. 1837. *Baṙgirkᶜ hay ew italakan* (*Dizzionario armeno-italiano*). Venice: St. Lazzaro.
DELG	Pierre Chantraine. 1999. *Dictionnaire étymologique de la langue grecque: Histoire des mots*. Second edition (First edition 1968). Paris: Klincksieck.
DPEWA	Bardhyl Demiraj, Qëndresë Haliti, Besim Kabashi, Olav Hackstein, Sergio Neri, Anila Omari & Christiane Bayer (eds.). 2018 ff. *Digitales Philologisch-Etymologisches Wörterbuch des Altalbanischen*. `https://www.dpwa.gwi.uni-muenchen.de/dictionary/`.

EDA	Hrach K. Martirosyan. 2010. *Etymological Dictionary of the Armenian Inherited Lexicon*. Leiden & Boston, MA: Brill.
EIEC	J. P. Mallory & D. Q. Adams. 1997. *Encyclopedia of Indo-European Culture*. London & Chicago, IL: Fitzroy Dearborn.
ÈSIJa	V. S. Rastorgueva & D. I. Èdel'man. 2000 ff. *Ètimologičeskij slovar' iranskix jazykov*. Moscow: Vostočnaja Literatura.
ÈSSJa	Oleg N. Trubačev. 1974 ff. *Ètimologičeskij slovar' slavjanskix jazykov*. Moscow: Nauka.
EWAia	Manfred Mayrhofer. 1992–1996. *Etymologisches Wörterbuch des Altindoarischen*. 2 vols. Heidelberg: Winter.
EWN	M. Philippa, F. Debrabandere, A. Quak, T. Schoonheim & N. van der Sijs. 2003–2009. *Etymologisch Woordenboek van het Nederlands*. Amsterdam University Press. `https://etymologiebank.nl`.
FEW	Walter von Wartburg. 1922 ff. *Französisches etymologisches Wörterbuch: Eine Darstellung des galloromanischen Sprachschatzes*. Bonn: Fritz Klopp/Berlin: Teubner/Basel: Zbinden.
GEW	Hjalmar Frisk. 1960–1972. *Griechisches etymologisches Wörterbuch*. 3 vols. Heidelberg: Winter.
HAB	Hračʿeay Ačaṙyan. 1971–1979. *Hayeren armatakan baṙaran*. 4 vols. Second edition (First edition 1926–1935). Yerevan: Erevani Hamalsarani Hratarakčʿowtʿyown.
HED	Jaan Puhvel. 1984 ff. *Hittite Etymological Dictionary*. Berlin & New York & Amsterdam: De Gruyter Mouton.
HEG	Johann Tischler. 1983 ff. *Hethitisches etymologisches Glossar*. Innsbruck: Institut für Sprachwissenschaft.
HLBB	Artem Sargsyan, Lavrenti Hovhannisyan, Nver Sargsyan, Ṙobert Tʿoxsaxyan & Ṙobert Owṙowtyan. 2001–2012. *Hayocʿ lezvi barbaṙayin baṙaran*. 7 vols. Yerevan: Gitowtʿyown.

IEW	Julius Pokorny. 1959. *Indogermanisches etymologisches Wörterbuch*. Bern: Francke.
KEWA	Manfred Mayrhofer. 1956–1980. *Kurzgefasstes etymologisches Wörterbuch des Altindischen*. 4 vols. Heidelberg: Winter.
LEW	Ernst Fraenkel. 1962–1965. *Litauisches Etymologisches Wörterbuch* (I-II). Heidelberg: Winter.
LIV²	Helmut Rix, Martin Kümmel, Thomas Zehnder, Reiner Lipp & Brigitte Schirmer (eds.). 2001. *Lexicon der indogermanischen Verben*. Second edition. Wiesbaden: Reichert. Addenda & corrigenda (AddCorr) available at `http://www.martinkuemmel.de/liv2add.html` (last updated 3 February 2015).
NBHL	Gabriel Awetikᶜean, Xačᶜatowr Siwrmēlean & Mkrtičᶜ Awgerean. 1836. *Nor baṙgirkᶜ haykazean lezowi*. 2 vols. Venice. Reprinted Yerevan 1979-1980.
NIL	Dagmar S. Wodtko, Britta Irslinger & Carolin Schneider. 2008. *Nomina im Indogermanischen Lexikon*. Heidelberg: Winter.
Norayr	Norayr N. Biwzandacᶜi. 1884. *Baṙgirkᶜ i gałłierēn lezowē i hayerēn/Dictionnaire français-arménien*. Constantinople: A. H. Boyajian.
UEW	Károly Rédei. 1986–1991. *Uralisches etymologisches Wörterbuch*. 3 vols. Budapest: Akadémiai Kiadó.
Vasmer	Max Vasmer. 1953–1958. *Russisches etymologisches Wörterbuch*. 3 vols. Heidelberg: Winter.
Walde-Hofmann	A. Walde & J. B. Hofmann. 1938–1954. *Lateinisches etymologisches Wörterbuch*. 2 vols. Heidelberg: Winter.

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Samenvatting

Titel: “Prehistorische leenwoorden in het Armeens: Hurro-Urartees, Kartveels en het ongeclassificeerde substraat”.

Dit proefschrift onderzoekt het taalcontact tussen het Armeens en verschillende taalgemeenschappen in de periode voor het ontstaan van de Armeense literaire traditie. Het Armeens behoort tot de Indo-Europese talen, maar het is reeds bekend dat het een grote hoeveelheid woorden bevat die niet terug te voeren zijn op het gemeenschappelijke Proto-Indo-Europees. Eerder onderzoek heeft zich vooral gericht op de grote hoeveelheid woordmateriaal uit Iraanse talen, en uit het Grieks en het Syrisch, die de Armeense taal beïnvloedden na de introductie van het christendom. In dit proefschrift ligt de nadruk daarentegen op de leenwoorden uit de Hurro-Urartese talen, de Kartveelse talen en ten slotte uit één of meer onbekende talen, die ook woorden hebben achtergelaten in andere Indo-Europese talen.

Hoofdstuk 1 is een korte inleiding tot de studie van de contacten van het Armeens. Erkend wordt dat meer dan tachtig procent van de Armeense woordenschat niet geërfd is van het Proto-Indo-Europees, en dat de etymologie van ongeveer de helft van alle Armeense woorden onbekend is. Vervolgens worden het doel en de werkwijze van het proefschrift gepresenteerd. Ten eerste is het doel een kritische evaluatie en afbakening van de drie eerder genoemde lagen van leenwoorden in het Armeens. Oudere voorstellen voor etymologieën van leenwoorden worden besproken en er wordt nieuw materiaal aangeleverd. Ten tweede poogt het proefschrift te beoordelen in hoeverre deze drie leenwoordencorpora licht kunnen werpen op de prehistorie van Armeenstalige bevolkingen, vooral met betrekking tot migraties en hun datering.

Hoofdstuk 2 behandelt de leenwoorden uit het Hurritisch en het Urartees. Deze twee nauw verwante talen, die fragmentarisch bewaard zijn vanaf het laatste deel van het derde millennium tot de val van het Urartese rijk in de zevende eeuw v. Chr., hebben reeds vroeg de interesse gewekt binnen de Armeense etymologie. Ondanks een relatief grote rijkdom aan oudere etymologische voorstellen, kan slechts van acht Armeense woorden aangetoond worden dat ze ontleend zijn aan het Hurritisch of het Urartees. Als gevolg van de nauwe overeenkomsten tussen de twee talen is het in veel gevallen niet mogelijk om te bepalen welke taal de directe donor was. Naast deze negen woorden zijn er nog elf woorden die mogelijk ontleningen uit het Hurro-Urartees zijn. Bovendien moet worden erkend dat vanwege de beperkte Hurritische en Urartese corpora niet kan worden uitgesloten dat nog meer Armeense woorden waarvan de etymologie niet bekend is in feite Hurro-Urartese leenwoorden zijn. Vervolgens wordt de relatieve chronologie van deze ontleningen besproken. Vastgesteld wordt dat ze de Armeense klankverschuiving moeten hebben gevolgd, maar voorafgegaan zijn door een aantal andere klankveranderingen, waaronder de metathese van de clusters **TR* en **DR*, en de verzwakking van de sequentie **-VpC-*. Dit maakt het mogelijk om het contact tussen het Armeens en het Hurro-Urartees eerder te plaatsen dan het eerste contact tussen het Armeens en het Oud-Iraans, in overeenstemming met de aanname dat het plaatsvond voor de ineenstorting van het Urartese rijk rond 700 v. Chr. Semantisch gezien kunnen de Hurro-Urartese leenwoorden grofweg worden geclassificeerd als "cultuurwoorden" (bijv. Armeens *xałoł* 'druif' en *san* 'ketel'). Er is dus geen bewijs voor een vergaande invloed op de Armeense woordenschat. Deze observatie doet vermoeden dat het contact tussen het Hurro-Urartees en het Armeens relatief oppervlakkig was, en misschien niet erg langdurig.

Vervolgens wordt in hoofdstuk 3 het contact tussen het Armeens en het Kartveels besproken. Meestal wordt aangenomen dat de Kartveelse talen, waaronder het Georgisch, Mingreels, Laz en Svan, afkomstig zijn uit de zuidelijke Kaukasus. Het is dus mogelijk dat er een vorm van Proto-Kartveels werd gesproken in het gebied toen Indo-Europese of Proto-Armeense sprekers naar het gebied trokken. Er wordt ook dikwijls aangenomen dat de typologische, vooral fonologische, kenmerken, die het Armeens vertoont in vergelijking met andere Indo-Europese talen, het resultaat zijn van een taalverschui-

ving onder een voorheen Kartveels-sprekende bevolking. In deze context is het opvallend dat slechts zeer weinig Armeense woorden van oudsher worden toegeschreven aan het Kartveels. Als gevolg van de etymologische analyses in dit hoofdstuk moet desondanks vastgesteld worden dat de Kartveelse talen de Armeense woordenschat in verschillende tijdsperioden hebben beïnvloed. De jongste van deze leenwoorden komen uit de Zan-talen, d.w.z. Mingreels en Laz, en hebben voornamelijk betrekking op het dagelijks leven en het houden van dieren. Een groep van iets oudere leenwoorden toont aan dat het contact tussen het Kartveels en het Armeens al plaatsvond vanaf het uiteenvallen van de gemeenschappelijke Georgisch-Zanische oertaal. Sommige ontleningen kunnen zelfs al zijn overgedragen voordat het Armeens leenwoorden van het Hurro-Urartees opneemt.

Het tweede deel van hoofdstuk 3 bespreekt een aantal woorden in de Kartveelse talen die kunnen worden toegeschreven aan het "Proto-Armeens", d.w.z. een voorloper van het Armeens die nog niet alle historische klankveranderingen had ondergaan. Hoewel veel van deze etymologieën met enige onzekerheid zijn omgeven, kunnen we toch vaststellen dat een archaïsche vorm van het Armeens invloed heeft gehad op de Kartveelse woordenschat. Het meest bekend is het woord voor 'wijn' (vgl. Georgisch *ɣwino*, Armeens *gini* < Proto-Indo-Europees **ǵoi̯Hn-*), waarvan op basis van een diepgaande discussie hier kan worden vastgesteld dat het inderdaad een Armeens leenwoord is. Sommige van deze woorden laten ook een iets exactere datering toe. Van bijzonder belang is het woord voor 'voorde' (vgl. Georgisch *poni*, Armeens *hun* < Proto-Indo-Europees **pontH-*) dat voorafgaat aan de Armeense verzwakking van initiële **p-* en de ontwikkeling van **-on-* naar *-un-*. Deze klankrelaties wijzen uit dat het contact tussen het Armeens en het Kartveels eerder moet zijn begonnen dan het contact tussen het Armeens en het Hurro-Urartees, waarvan geen van de relevante leenwoorden deze klankveranderingen vertoont.

Hoofdstuk 4 is het meest uitgebreide in het proefschrift. Het behandelt een groot aantal woorden waarvan kan worden aangetoond dat ze behoren tot de vroegste leenwoorden die werden opgenomen nadat het Proto-Armeens was afgesplitst van het Proto-Indo-Europees. De bron van deze leenwoorden is echter onbekend. Met andere woorden, het zijn wat conventioneel "substraatwoorden" worden genoemd. We beginnen met een methodologische dis-

cussie. Leenwoorden uit onbekende talen kunnen worden geïdentificeerd op basis van een aantal criteria, maar het is vooral indicatief als het woord onregelmatige fonologische correspondenties vertoont met soortgelijke woorden in andere, verwante (d.w.z. Indo-Europese) talen. Er zijn echter een aantal valkuilen gekoppeld aan een dergelijke werkwijze, en er wordt betoogd dat eerder werk op dit gebied ietwat te inclusief is geweest in de zoektocht naar substraatwoorden. Na een grondige analyse van 85 etymologieën wordt geconcludeerd dat slechts iets meer dan de helft hiervan kan worden geclassificeerd als zeer vroege leenwoorden uit een of meer onbekende talen. De rest zijn ofwel regelmatig overgeërfde woorden, latere leenwoorden, of woorden waarvan de etymologie onbekend blijft. Deze ontleningen hebben gemeen dat ze ook in andere Indo-Europese talen zijn opgetekend. Omdat ze echter voorafgaan aan de overgrote meerderheid van de klankveranderingen in het Armeens, moet dit relatief kort na de splitsing van de Indo-Europese dialecten zijn gebeurd. Onder deze woorden is er een bijzonder grote overlap tussen Armeense en Griekse woorden, wat doet vermoeden dat de dialecten waaruit deze talen zijn ontstaan dicht bij elkaar werden gesproken. Daarnaast is er echter ook een beduidende overlap met het Italisch en Germaans, wat de indruk wekt dat deze takken zich nog steeds in dezelfde periferie bevonden. Bij een dergelijke kwantitatieve analyse blijft het echter onduidelijk in hoeverre de overlap van "substraatglossen" te wijten is aan toevalligheden in de overdracht. Uiteindelijk staat echter toch boven kijf dat de voorloper van het Armeens geografisch tot de "kerntalen" van de Indo-Europese familie behoort en daarom een tijdlang in de Pontisch-Kaspische steppe gesitueerd was.

Tot slot worden in hoofdstuk 5 een aantal kernbevindingen samengevat en verder uitgewerkt. Van de drie taalcontactsituaties die in dit proefschrift worden besproken, is het Hurro-Urartese contact het jongste. Er is een overlap met het Kartveelse taalcontact, dat vele eeuwen omspant, maar eerder begint. Van essentieel belang is dat de vroegste leenwoorden uit het Proto-Armeens in het Kartveels waarschijnlijk dateren van vóór het Hurro-Urartese taalcontact. Dit toont aan dat Armeenstalige groepen tegen het einde van het tweede millennium v. Chr. al in de zuidelijke Kaukasus aanwezig waren. De meerderheid van de geleerden neemt traditioneel aan dat Armeenstalige groepen pas na 1200 v. Chr. vanuit het Balkanschiereiland naar Oost-Anatolië trokken. De hierboven genoemde

taalkundige bevindingen roepen echter twijfel op over dit scenario en doen ons juist aannemen dat het Proto-Armeens al ten tijde van het Hettitische Rijk in de Kaukasus werd gesproken. Een dergelijke veronderstelling is meer in lijn met een alternatieve hypothese, namelijk dat de introductie van de Armeense taal in de Kaukasus samenvalt met de overgang van de agrarische Kura-Araxescultuur naar de meer nomadische Trialeti-Vanajorcultuur rond 2000 v. Chr. Dit scenario wordt nu ondersteund door onderzoek naar prehistorisch DNA. Voorafgaand aan deze migraties tonen de vroegste leenwoorden aan dat de voorloper van het Armeens behoorde tot een kerngroep van Indo-Europese talen die geleidelijk overgingen van een puur nomadisch bestaan naar sporadische landbouw en tegelijkertijd in contact kwamen met niet-Indo-Europese talen.

Curriculum vitae

Rasmus Thorsø Nielsen was born in 1990 in Augustenborg, Denmark. From 2006 to 2009, he attended Svendborg Gymnasium, where he focused on musicology. From 2010, he studied Indo-European Linguistics at the University of Copenhagen, where he also took courses in Akkadian and Medieval Nordic languages. In 2014, he received the BA degree with a thesis concerning the Latin genitive singular of the second declension.

He immediately enrolled in the master's programme in Indo-European Linguistics, also in Copenhagen. In the following years, he took an increasing interest in the linguistic history of Armenian. In 2016, he received the MA degree with a thesis on the shared lexicon of Armenian and Greek, supervised by Prof.dr. Guus Kroonen. In 2017, he was awarded the prize for best master's thesis by the Society for Indo-European Studies.

From 2018 to 2022, he was employed as a doctoral student at Leiden University, part of the ERC-funded research project EUROLITHIC, and supervised by Prof.dr. Guus Kroonen and Prof.dr. Alexander Lubotsky. During this time, he also (co-)authored several publications, took part in a Modern Eastern Armenian summer course in Yerevan, and founded an interest in Kartvelian and Nakh-Daghestanian historical linguistics.

Additionally, he has worked as a student assistant with the onomastics research group, University of Copenhagen, and as a consultant in the language technology industry. Since 2017, he also functions as an external examiner of comparative linguistics at the universities of Aarhus and Copenhagen.